USDA United States Department of Agriculture

NRCS Natural Resources Conservation Service

In cooperation with South Carolina Agricultural Experiment Station and South Carolina Department of Natural Resources, Land, Water and Conservation Division

Soil Survey of Marlboro County, South Carolina

How To Use This Soil Survey

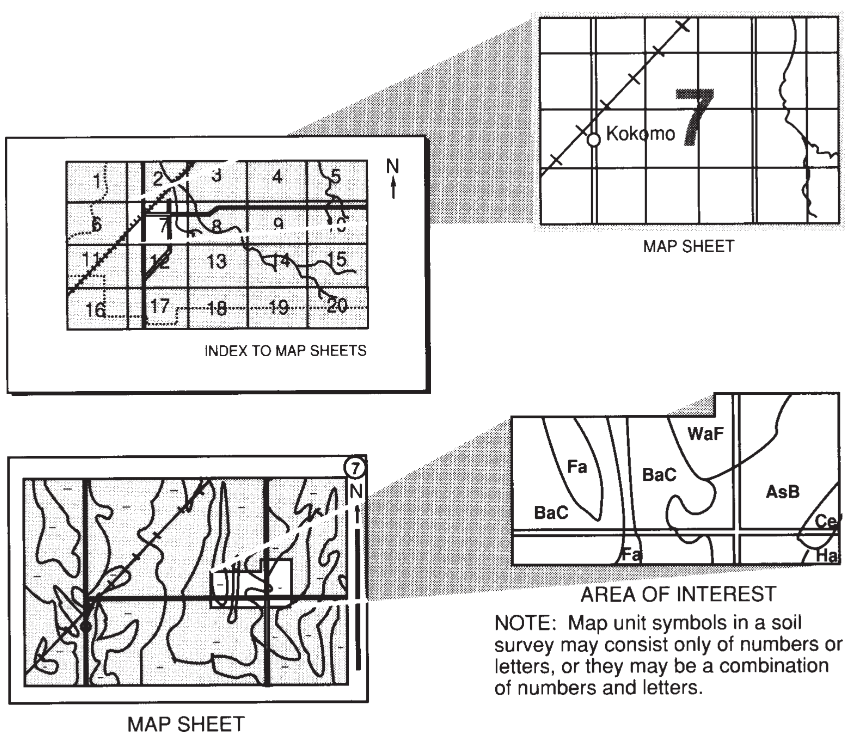
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1993. Soil names and descriptions were approved in 1995. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1993. This soil survey was made cooperatively by the Natural Resources Conservation Service, the South Carolina Agricultural Experiment Station, and the South Carolina Department of Natural Resources, Land, Water and Conservation Division. The survey is part of the technical assistance furnished to the Marlboro Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Nondiscrimination Statement

Cover: Windstrips of small grain protect young cotton plants in an area of Faceville loamy sand, 0 to 2 percent slopes.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Issued 2006

Foreword

This soil survey contains information that affects land use planning in Marlboro County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various decisions for land use or land treatment. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Walter W. Douglas
State Conservationist
Natural Resources Conservation Service

Soil Survey of Marlboro County, South Carolina

By Ronald Morton, Natural Resources Conservation Service

Fieldwork by Ronald Morton and Edward H. Earles, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
South Carolina Agricultural Experiment Station and South Carolina Department of Natural Resources, Land, Water, and Conservation Division

MARLBORO COUNTY is in the northeastern part of South Carolina (fig. 1). It is bounded on the north by Richmond and Scotland Counties, North Carolina, and on the east by Dillon County. The Pee Dee River separates it from Florence, Darlington, and Chesterfield Counties.

The county has a total land area of 482 square miles, or 310,464 acres. Elevations ranges from about 50 feet above sea level, where the Pee Dee River flows out of the county, to more than 300 feet above sea level, directly south of the state line north of Wallace. Bennettsville is the county seat and is located in the center of the county. It has a population of about 9,345. According to the 1990 census, the county has a population of 29,361.

Agriculture has been important to the growth and development of Marlboro County. About 31 percent of the county is cropland. Cotton and soybeans are the main crops. Other major crops include wheat, corn, and tobacco.

Marlboro County has about 172,000 acres of forest land. Most of the upland areas support planted loblolly pine, and most of the lowland areas support loblolly pine and hardwoods.

This soil survey updates the survey of Marlboro County published in 1965 *(3)*. It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the County

This section provides general information about Marlboro County. It briefly describes the history; physiography, relief, and drainage; and climate of the survey area.

History

Marlboro County was established on March 12, 1785. It was named for an English statesman and politician, John Churchill, Duke of Marlborough.

Originally, the survey area was inhabited by the Pee Dee Indians. About 1737, the first European settlers arrived. They were Welsh families, and their first settlement was named Welsh Neck. Other settlers included English and Scotch-Irish. The early

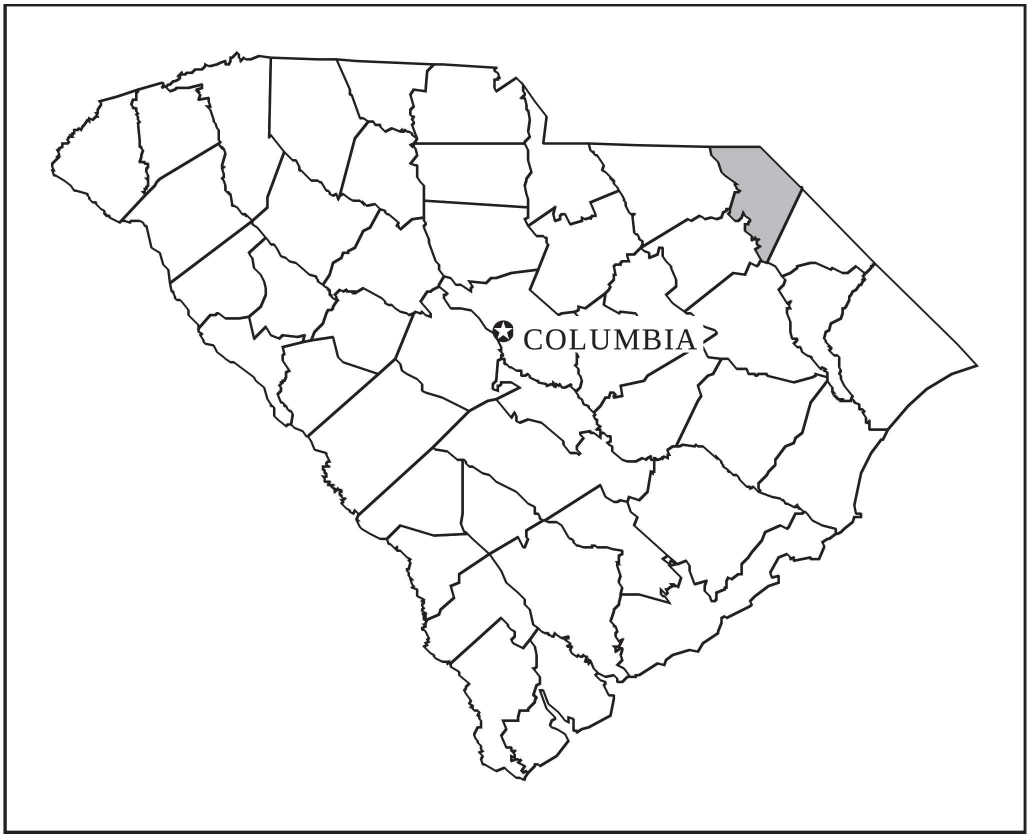


Figure 1.—Location of Marlboro County in South Carolina.

settlers cleared forests, cultivated land, built roads and bridges, and established towns and schools.

The county seat of Marlboro County was founded on December 14, 1819. The city was named in honor of Governor Thomas Bennett. The original settlement of Bennettsville was located about a mile from the Pee Dee River.

Blenheim, a town about 7 miles south of Bennettsville, is the site of the Blenheim mineral spring, which dates to 1791. The spring is presently being used to manufacture ginger ale.

Physiography, Relief, and Drainage

Marlboro County is made up of four major land resource areas *(6)*. They are the Southern Coastal Plain, the Carolina and Georgia Sand Hills, the Atlantic Coast Flatwoods, and the Southern Piedmont (fig. 2). Elevations range from 50 to about 300 feet above sea level.

The Southern Coastal Plain

Most of the Southern Coastal Plain is farmland and is important in the production of cash crops. This area is located in the central part of the county. Cotton is the major crop. Soybeans, tobacco, corn, and wheat are also important.

The soils in this area are generally nearly level to sloping but are steeper on side slopes near drainageways. Most of the soils are well drained or moderately well drained. Poorly drained soils are in oval depressions, in other depressed areas, on broad flats, and on flood plains. Norfolk, Faceville, Noboco, Coxville, Bonneau,

Persanti, and Smithboro soils are the major upland soils. The well drained to poorly drained Chenneby, Chastain, Riverview, Kinston, Pamlico, and Johnston soils are the major soils on the flood plains along the Pee Dee River, Crooked Creek, Naked Creek, the Little Pee Dee River, Three Creeks, and their tributaries.

The Carolina and Georgia Sand Hills

Most of the Carolina and Georgia Sand Hills is woodland. This area is important in timber production, including the production of pine straw for use in landscaping. It is located in the northern part of the county. Cash crops include melons, soybeans, corn, hay, and wheat.

The soils in this area are generally nearly level to moderately steep but are steeper on side slopes near drainageways. Most of the soils are excessively drained to well drained. Alpin, Candor, Ailey, and Cowarts soils are the major upland soils. The moderately well drained Pelion soils are in nearly level or gently sloping areas generally near drainageways. The poorly drained or very poorly drained Pamlico, Johnston, and Kinston soils are on flood plains.

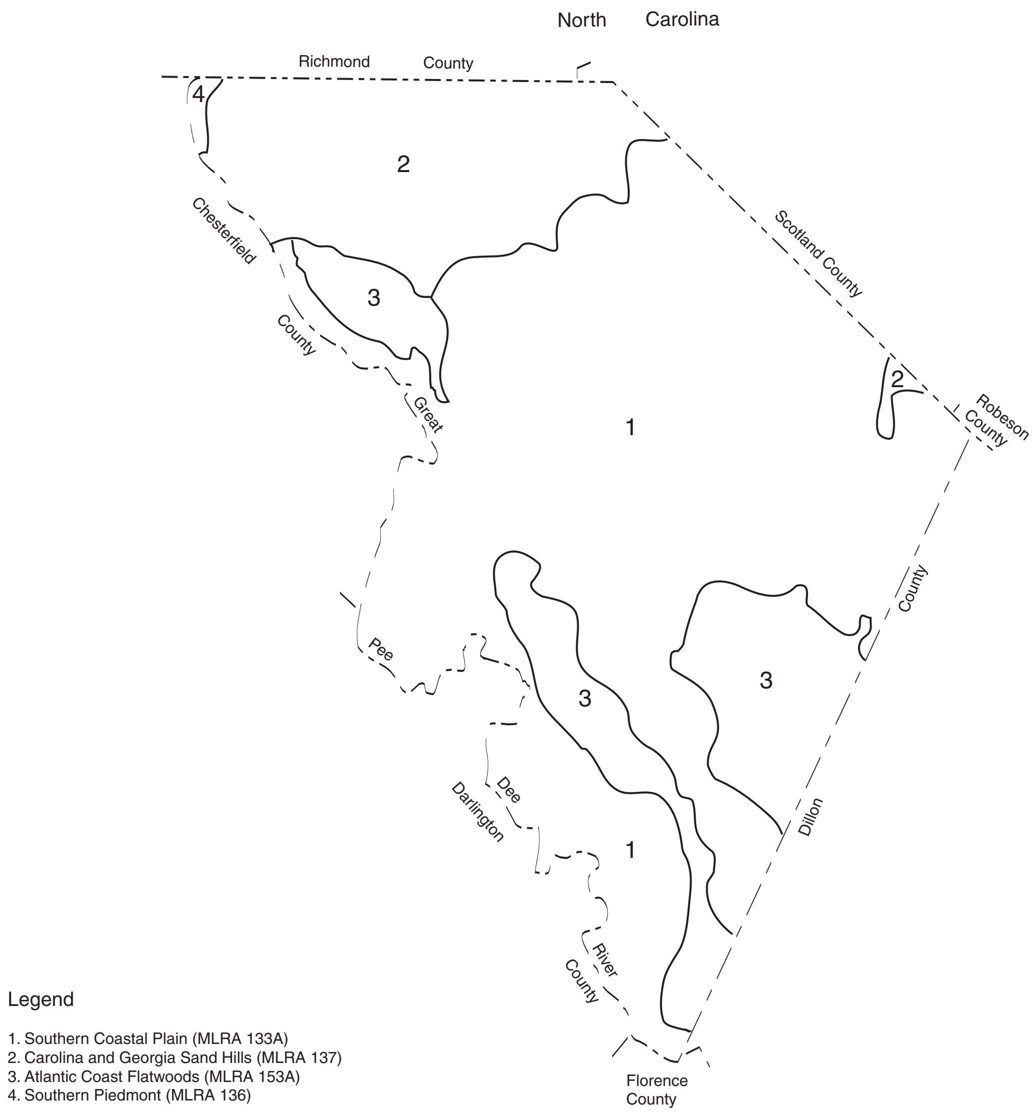


Figure 2.—Major land resource areas of Marlboro County, South Carolina.

The Atlantic Coast Flatwoods

Most of the Atlantic Coast Flatwoods is woodland. This area is located in the southeastern part of the county. It is flat and includes large Carolina bays. Hilson Bay is the largest bay. Cash crops include cotton, soybeans, corn, tobacco, and wheat.

Most of the soils in this area are nearly level or gently sloping and moderately well drained to poorly drained. Persanti, Smithboro, Coxville, and Byars soils are the major soils. Persanti and Smithboro soils are on ridges. Coxville and Byars soils are in depressed areas, along shallow drainageways, and in the Carolina bays. Johnston and Pamlico soils are in drainageways.

The Southern Piedmont

All of the Southern Piedmont is woodland. This area is located in the extreme northwestern part of the county. The soils are generally gently sloping to steep but are steeper on side slopes near drainageways.

The soils in this area are well drained. Badin soils are the major upland soils. Riverview, Chastain, Chenneby, and Chewacla soils are on flood plains. They are well drained to somewhat poorly drained.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at McColl, South Carolina, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 45.3 degrees F and the average daily minimum temperature is 33.8 degrees. The lowest temperature on record, which occurred on January 21, 1985, is -5 degrees. In summer, the average temperature is 78.7 degrees and the average daily maximum temperature is 89.6 degrees. The highest recorded temperature, which occurred on August 1, 1980, is 107 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total average annual precipitation is 43.19 inches. Of this, about 25.90 inches, or 60 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 6.95 inches on October 15, 1954. Thunderstorms occur on about 53 days each year, and most occur between May and August.

The average seasonal snowfall is 2.6 inches. The greatest snow depth at any one time during the period of record and the heaviest 1-day snowfall on record is 15 inches, recorded on February 10, 1973. On the average, about 1 day per year has at least 1 inch of snow on the ground.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The

unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify the soils. After describing the soils and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. The data from these analyses and tests and from field-observed characteristics and soil properties are used to predict behavior of the soils under different uses. Interpretations are field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a relatively high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in accurately locating boundaries.

Detailed Soil Map Units

The map units delineated on the detailed maps represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the heading “Use and Management of the Soils.”

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some “included” areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Noboco loamy sand, 0 to 2 percent slopes, is a phase of the Noboco series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Chastain-Chenneby complex, frequently flooded, is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Contents") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

AaB—Ailey sand, moderately wet, 0 to 6 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish brown sand

Subsurface layer:
7 to 23 inches—light yellowish brown sand

Subsoil:
23 to 40 inches—brownish yellow sandy clay loam
40 to 46 inches—brownish yellow sandy clay loam that has light gray and brownish yellow mottles
46 to 56 inches—mottled light gray, brownish yellow, and red sandy clay

Substratum:
56 to 65 inches—mottled light gray, red, and yellow sandy clay loam

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Blanton, Candor, and Troup soils in the higher landscape positions
- The well drained Lucy and Uchee soils in landscape positions similar to those of the Ailey soil
- Small areas that have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils in landscape positions similar to those of the Ailey soil
- The moderately well drained Pelion soils in the lower landscape positions
- Small clayey areas

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management measures and considerations: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Longleaf pine
Management concerns: Equipment limitation, seedling mortality, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Slope and droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

AeC—Ailey loamy sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—grayish brown loamy sand

Subsurface layer:
6 to 25 inches—very pale brown sand

Subsoil:
25 to 33 inches—brownish yellow sandy loam that has strata of sandy clay loam
33 to 46 inches—reddish yellow sandy clay loam

Substratum:
46 to 55 inches—reddish yellow sandy loam
55 to 65 inches—mottled strong brown, light red, and light gray sandy loam

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Candor and Troup soils and the well drained Uchee soils in landscape positions similar to those of the Ailey soil
- Small areas that have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils in the lower landscape positions
- The moderately well drained Pelion soils in landscape positions that are similar to or slightly lower than those of the Ailey soil
- Small clayey areas

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate

Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Longleaf pine
Management concerns: Equipment limitation, seedling mortality, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Slope and droughtiness
Management measures and considerations:
- The slope and droughtiness limitations can be reduced by selecting well adapted plants, land shaping, and providing supplemental irrigation during the growing season.

AeD—Ailey loamy sand, 10 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—grayish brown loamy sand

Subsurface layer:
6 to 25 inches—very pale brown sand

Subsoil:
25 to 33 inches—brownish yellow sandy loam that has strata of sandy clay loam
33 to 46 inches—reddish yellow sandy clay loam

Substratum:
46 to 55 inches—reddish yellow sandy loam
55 to 65 inches—mottled strong brown, light red, and light gray sandy loam

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Candor and Troup soils and the well drained Uchee soils in landscape positions similar to those of the Ailey soil
- Small areas that have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils in landscape positions similar to those of the Ailey soil
- Small clayey areas

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Strongly sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion

Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Longleaf pine
Management concerns: Equipment limitation, seedling mortality, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Slope and droughtiness
Management measures and considerations:
- The slope and droughtiness limitations can be reduced by selecting well adapted plants, land shaping, and providing supplemental irrigation during the growing season.

AgD—Ailey gravelly loamy sand, 6 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Landform: Narrow ridges and side slopes
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 9 inches—gravelly loamy sand

Subsurface layer:
9 to 22 inches—very pale brown gravelly loamy sand

Subsoil:
22 to 38 inches—reddish yellow sandy loam
38 to 47 inches—reddish yellow sandy clay loam that has reddish mottles

Substratum:
47 to 65 inches—red sandy loam

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- Small areas that have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils in landscape positions similar to those of the Ailey soil
- Small clayey areas

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping or strongly sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion and gravel in the surface layer
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Small stones, droughtiness, and slope
Management measures and considerations:
- Proper fertilization, seeding, removing stones, mulching, and land shaping help to establish and maintain plant cover.

AgE—Ailey gravelly loamy sand, 15 to 25 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 40 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 9 inches—gravelly loamy sand

Subsurface layer:
9 to 22 inches—very pale brown gravelly loamy sand

Subsoil:
22 to 38 inches—reddish yellow sandy loam
38 to 47 inches—reddish yellow sandy clay loam that has reddish mottles

Substratum:
47 to 65 inches—red sandy loam

Inclusions

Similar (0 to 15 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- Small areas that do not have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils in landscape positions similar to those of the Ailey soil
- The moderately well drained Pelion soils in the slightly lower landscape positions
- Small clayey areas

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Moderately steep
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Hayland and pasture
Suitable grasses: None
Management concerns: Slope, erosion, and gravel in the surface layer

Woodland
Trees to plant: Longleaf pine
Management concerns: Equipment limitation, seedling mortality, gravel in the surface layer, and windthrow hazard
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Trees are subject to windthrow because of the limited rooting depth.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Small stones, droughtiness, and slope
Management measures and considerations:
- Proper fertilization, seeding, removing stones, mulching, and land shaping help to establish and maintain plant cover.

AhB—Alaga sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Atlantic Coast Flatwoods
Slope length: Typically 100 to 200 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 75 acres, ranging from 5 to 125 acres

Typical Profile

Surface layer:
0 to 9 inches—dark grayish brown sand

Substratum:
9 to 55 inches—strong brown loamy sand
55 to 80 inches—brownish yellow sand

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat excessively drained Blanton, Foxworth, and Troup soils and the well drained Candor soils in the higher landscape positions
- Small areas that have more than 15 percent gravel in the surface layer

Dissimilar (0 to 10 percent of map unit):
- The well drained Clayham and Wickham soils on side slopes and low ridgetops near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained or somewhat excessively drained
Permeability: Rapid
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Truck crops
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals rather than used in single applications.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity

Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slight limitations

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

ApB—Alpin sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 300 feet, ranging from 50 to 1,000 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—brown sand

Subsurface layer:
6 to 48 inches—brownish yellow and strong brown sand
48 to 68 inches—yellow sand that has brown lamellae
68 to 80 inches—very pale brown sand that has brown lamellae and white streaks of sand

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Candor soils in the slightly lower landscape positions
- The well drained Ailey soils on side slopes near drainageways
- Small areas that have gravel on the surface
- Small areas that do not have lamellae

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils on side slopes near drainageways
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Moderately rapid
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Very slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Truck crops
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slight limitations

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

ApC—Alpin sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 200 feet, ranging from 50 to 250 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—brown sand

Subsurface layer:
6 to 48 inches—brownish yellow and strong brown sand
48 to 68 inches—yellow sand that has brown lamellae
68 to 80 inches—very pale brown sand that has brown lamellae and white streaks of sand

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Candor soils in the slightly lower landscape positions
- The well drained Ailey soils on side slopes near drainageways
- Small areas that have gravel on the surface
- Small areas that do not have lamellae

Dissimilar (0 to 10 percent of map unit):
- The well drained Cowarts soils on side slopes near drainageways and the very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Moderately rapid
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Low
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Truck crops

Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

AuB—Autryville sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown sand

Subsurface layer:
6 to 25 inches—brownish yellow sand

Subsoil:
25 to 37 inches—brownish yellow sandy loam
37 to 50 inches—brownish yellow sand
50 to 65 inches—light yellowish brown sandy clay loam that has light gray and reddish yellow mottles

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Blanton soils in the higher landscape positions
- The somewhat poorly drained Ocilla soils around the rims of depressions

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Leon and Rains soils in depressions and shallow drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, cotton, tobacco, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine

Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and providing supplemental irrigation during the growing season.

BaD—Badin silt loam, 2 to 15 percent slopes

Setting

Major Land Resource Area: Southern Piedmont
Slope length: Typically 100 to 150 feet, ranging from 50 to 250 feet
Shape of areas: Elongated
Size of areas: Typically 30 to 50 acres, ranging from 10 to 75 acres

Typical Profile

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 29 inches—red clay
29 to 31 inches—red and yellow clay and silt loam

Substratum:
31 to 60 inches—red and yellow fractured slate that crushes to silt loam

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Cowarts soils in the slightly higher landscape positions

Dissimilar (about 20 percent of map unit):
- The well drained Ailey soils in the higher landscape positions
- Small areas that do not have a subsoil

Soil Properties and Qualities

Depth class: Moderately deep
Drainage class: Well drained

Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: Greater than 6 feet
Slope class: Gently sloping to strongly sloping
Hazard of water erosion: Very severe
Surface runoff: Very high
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Slope and erosion

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Slope and erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Windthrow hazard and plant competition
Management measures and considerations:
- Trees are subject to windthrow because of the limited rooting depth.
- The control of competing vegetation is required for the growth of young seedlings.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Depth to bedrock
Management measures and considerations:
- The depth to bedrock can be overcome by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Shrink-swell potential and slope
Management measures and considerations:
- The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with materials that have a low shrink-swell potential.
- The highly weathered bedrock can be ripped with heavy machinery, or structural designs which do not penetrate the bedrock and are adapted to the shape of the slope can be used.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Slope

Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

BaF—Badin silt loam, 15 to 40 percent slopes

Setting

Major Land Resource Area: Southern Piedmont
Slope length: Typically 100 to 150 feet, ranging from 50 to 250 feet
Shape of areas: Elongated
Size of areas: Typically 30 to 50 acres, ranging from 10 to 75 acres

Typical Profile

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 29 inches—red clay
29 to 31 inches—red and yellow clay and silt loam

Substratum:
31 to 60 inches—red and yellow fractured slate that crushes to silt loam

Inclusions

Dissimilar (about 20 percent of map unit):
- The well drained Cowarts and Ailey soils in the higher landscape positions
- Small areas that do not have a clayey subsoil

Soil Properties and Qualities

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: Greater than 6 feet
Slope class: Moderately steep or steep
Hazard of water erosion: Very severe
Surface runoff: Very high
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Slope and erosion

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Slope and erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland

Trees to plant: Loblolly pine

Management concerns: Erosion hazard, equipment limitation, windthrow hazard, and plant competition

Management measures and considerations:

- Harvesting methods that disturb the soil as little as possible, such as locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways, moving logs on the contour, and plowing fire lanes on the contour, minimize the erosion hazard.
- The slope restricts the use of wheeled and tracked equipment on skid trails.
- Trees are subject to windthrow because of the limited rooting depth.
- The control of competing vegetation is required for the growth of young seedlings.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields

Degree of limitations: Severe

Restrictive features: Depth to bedrock

Management measures and considerations:

- The depth to bedrock can be overcome by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements

Degree of limitations: Moderate

Restrictive features: Shrink-swell potential and slope

Management measures and considerations:

- The effects of shrinking and swelling can be minimized by using proper engineering designs and by backfilling with materials that have a low shrink-swell potential.
- The highly weathered bedrock can be ripped with heavy machinery, or structural designs which do not penetrate the bedrock and are adapted to the shape of the slope can be used.

Lawns and landscaping

Degree of limitations: Severe

Restrictive features: Slope

Management measures and considerations:

- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

BnB—Blanton sand, 0 to 6 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain

Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet

Shape of areas: Irregular

Size of areas: Typically 25 to 80 acres, ranging from 10 to 125 acres

Typical Profile

Surface layer:

0 to 8 inches—dark grayish brown sand

Subsurface layer:
8 to 70 inches—yellowish brown, yellow, and very pale brown sand

Subsoil:
70 to 74 inches—yellowish brown sandy clay loam that has light brownish gray mottles
74 to 80 inches—gray sandy clay loam that has yellowish brown mottles

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Autryville and Bonneau soils in the slightly lower landscape positions
- The well drained Ailey and Uchee soils on side slopes near drainageways
- The somewhat poorly drained Ocilla soils on the edges of depressions
- Small areas that have gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Rains and Coxville soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained to moderately well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Very low
Organic matter content: Low

Use and Management

Major Uses: Cropland, woodland, and pasture

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality

Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

BnC—Blanton sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 350 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown sand

Subsurface layer:
8 to 70 inches—yellowish brown, yellow, and very pale brown sand

Subsoil:
70 to 74 inches—yellowish brown sandy clay loam that has light brownish gray mottles
74 to 80 inches—gray sandy clay loam that has yellowish brown mottles

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey and Uchee soils on side slopes near drainageways
- The somewhat poorly drained Ocilla soils on the edges of depressions
- Small areas that have gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained to moderately well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Slight
Surface runoff: Low
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness and slope
Management measures and considerations:
- The wetness and slope limitations can be reduced by specially designing a septic system and installing the absorption lines on the contour.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope

Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness and slope
Management measures and considerations:
- The droughtiness and slope limitations can be reduced by selecting well adapted plants, land shaping, and providing supplemental irrigation during the growing season.

BoB—Bonneau sand, 0 to 4 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 15 to 65 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—brown sand

Subsurface layer:
6 to 24 inches—pale brown sand

Subsoil:
24 to 51 inches—brownish yellow sandy clay loam that has reddish mottles in the lower part
51 to 65 inches—brownish yellow sandy clay loam that has reddish and grayish mottles

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Blanton soils in the higher landscape positions
- The well drained Wagram soils in landscape positions similar to those of the Bonneau soil
- The well drained Uchee soils on side slopes near drainageways

Dissimilar (0 to 10 percent of map unit):
- The well drained Emporia soils on sides slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Low
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

By—Byars loam

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Broad flats and areas along drainageways
Slope length: Typically 100 to 500 feet, ranging from 50 to 700 feet

Shape of areas: Irregular or oval
Size of areas: Typically 50 to 150 acres, ranging from 5 to 300 acres

Typical Profile

Surface layer:
0 to 19 inches—black loam

Subsoil:
19 to 23 inches—dark gray clay loam
23 to 60 inches—gray clay and light gray silty clay having reddish yellow mottles

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Coxville, McColl, and Rains soils in landscape positions similar to those of the Byars soil
- The somewhat poorly drained Lynchburg and Smithboro soils in the higher landscape positions
- The very poorly drained Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Slow
High water table: 1.0 foot above the surface to 1.0 foot below
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Very slow
Organic matter content: Moderate

Use and Management

Major Uses: Woodland and some cropland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness and slow permeability
Management measures and considerations:
- Because of the slow permeability, shallow surface drains and open ditches are commonly used to control the water table.
- Returning crop residue to the soil helps to maintain good tilth and the organic matter content.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition

Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Ponding and slow permeability
Management measures and considerations:
- Because of the difficulty and expense of reducing the ponding and permeability limitations, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Ponding
Management measures and considerations:
- Because of the difficulty and expense of reducing the ponding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

CaB—Candor sand, 0 to 6 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 350 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 8 inches—brown sand

Subsurface layer:
8 to 26 inches—light yellowish brown sand

Subsoil:
26 to 38 inches—brown loamy sand
38 to 58 inches—brownish yellow sand
58 to 62 inches—brownish yellow sandy loam
62 to 70 inches—brownish yellow sandy clay loam that has strong brown mottles

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Foxworth soils and the excessively drained Alpin soils in the higher landscape positions
- The somewhat excessively drained Blanton soils in the lower landscape positions
- The well drained Ailey soils on side slopes near drainageways
- Small areas that have gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid or very rapid in the sandy horizons; moderate or moderately slow in the B´t horizons
Depth to high water table: Greater than 6 feet
Available water capacity: Very low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and cropland (fig. 3)

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Figure 3.—An area of Candor sand, 0 to 6 percent slopes. This soil is better suited to trees and deep-rooted pasture grasses than to row crops.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slight limitations

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

CaC—Candor sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 250 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 8 inches—brown sand

Subsurface layer:
8 to 26 inches—light yellowish brown sand

Subsoil:
26 to 38 inches—brown loamy sand
38 to 58 inches—brownish yellow sand
58 to 62 inches—brownish yellow sandy loam
62 to 70 inches—brownish yellow sandy clay loam that has strong brown mottles

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Foxworth soils and the excessively drained Alpin soils in the higher landscape positions
- The somewhat excessively drained Blanton soils in the lower landscape positions
- The well drained Ailey soils on side slopes near drainageways
- Small areas that have gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid or very rapid in the sandy horizons; moderate or moderately slow in the B´t horizons
Depth to high water table: Greater than 6 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine

Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

CaD—Candor sand, 10 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 100 to 350 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 8 inches—brown sand

Subsurface layer:
8 to 26 inches—light yellowish brown sand

Subsoil:
26 to 38 inches—brown loamy sand
38 to 58 inches—brownish yellow sand
58 to 62 inches—brownish yellow sandy loam
62 to 70 inches—brownish yellow sandy clay loam that has strong brown mottles

Inclusions

Similar (less than 20 percent of map unit):
- The excessively drained Alpin soils in the higher landscape positions
- The well drained Ailey soils on side slopes near drainageways
- Small areas that have gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid or very rapid in the sandy horizons; moderate or moderately slow in the B´t horizons
Depth to high water table: Greater than 6 feet
Available water capacity: Low
Slope class: Strongly sloping
Hazard of water erosion: Moderate
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, slope, and soil blowing

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

CdB—Candor sand, moderately wet, 0 to 6 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 350 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 9 inches—brown sand

Subsurface layer:
9 to 20 inches—light yellowish brown loamy sand

Subsoil:
20 to 43 inches—brownish yellow loamy sand
43 to 56 inches—brownish yellow sand
56 to 62 inches—brownish yellow sandy clay loam that has red and gray mottles
62 to 70 inches—gray sandy clay loam that has pale brown and red mottles

Inclusions

Similar (less than 20 percent of map unit):
- The somewhat excessively drained Foxworth and Alpin soils in the higher landscape positions
- The somewhat excessively drained Blanton soils in the slightly lower landscape positions
- The well drained Ailey soils on side slopes near drainageways
- Small areas that have gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The very poorly drained Pamlico and Johnston soils along drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid or very rapid in the sandy horizons; moderate or moderately slow in the B´t horizons
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Low
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

Ce—Chastain-Chenneby complex, frequently flooded

Setting

Major Land Resource Areas: Southern Piedmont, Southern Coastal Plain, and Atlantic Coast Flatwoods

Landform: Flood plains
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 400 acres

Typical Profile

Chastain
Surface layer:
0 to 5 inches—dark grayish brown loam

Subsoil:
5 to 54 inches—gray clay

Substratum:
54 to 72 inches—light gray loamy sand

Chenneby
Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 12 inches—yellowish brown silt loam
12 to 21 inches—light yellowish brown silty clay loam
21 to 39 inches—light brownish gray silty clay loam
39 to 54 inches—brownish gray silty clay loam that has reddish yellow and brownish yellow mottles
54 to 72 inches—brownish gray silt loam that has light yellowish brown mottles

Soil Properties and Qualities

Chastain
Depth class: Very deep
Drainage class: Poorly drained or somewhat poorly drained
Permeability: Slow
Depth to high water table: 0 to 1.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Slow
Organic matter content: Low
Flooding: Frequent

Chenneby
Depth class: Very deep
Drainage class: Poorly drained or somewhat poorly drained
Permeability: Moderate
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low
Flooding: Frequent

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Coxville soils in the higher landscape positions

- The poorly drained Chewacla soils in landscape positions similar to those of the Chastain and Chenneby soils

Dissimilar (0 to 10 percent of map unit):
- The well drained Clayham, Riverview, and Wickham soils and the excessively drained Tarboro soils in the higher landscape positions

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Reducing the flooding limitation is generally not economically feasible.
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soils have drained sufficiently and are firm enough to withstand trampling by livestock.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine and sweetgum
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, and harvesting trees during dry periods help to reduce the equipment limitation.
- Reducing the flooding hazard on these soils is generally not economically feasible.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, these soils generally are not used for urban development.

Ch—Chenneby silt loam, occasionally flooded

Setting

Major Land Resource Areas: Southern Piedmont, Southern Coastal Plain, and Atlantic Coast Flatwoods
Landform: Flood plains along the Pee Dee River and large creeks
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular

Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 12 inches—yellowish brown silt loam
12 to 21 inches—light yellowish brown silty clay loam
21 to 39 inches—light brownish gray silty clay loam
39 to 54 inches—brownish gray silt loam that has reddish yellow and brownish yellow mottles
54 to 72 inches—brownish gray silt loam that has light yellowish brown mottles

Inclusions

Similar (less the 10 percent of map unit):
- The poorly drained Chastain soils in the lower landscape positions
- The somewhat poorly drained Smithboro soils in the higher landscape positions
- The somewhat poorly drained Chewacla soils in landscape positions similar to those of the Chenneby soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Clayham, Riverview, and Wickham soils and the somewhat excessively drained Tarboro soils in the higher landscape positions

Soil Properties and Qualities

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: 0 to 2.5 feet
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low
Flooding: Occasional

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally impractical.
- The effects of flooding can be reduced by planting crops that have a short growing season and can be planted after the flooding in spring and harvested before the flooding in fall and winter.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding and wetness

Management measures and considerations:
- Reducing the flooding limitation on this soil is generally not economically feasible.
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine, sweetgum, and yellow-poplar
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, and harvesting trees during dry periods help to reduce the equipment limitation.
- Reducing the flooding hazard on this soil is generally not economically feasible.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for urban development.

CkA—Chewacla loam, 0 to 2 percent slopes, frequently flooded

Setting

Major Land Resource Areas: Southern Piedmont, Southern Coastal Plain, and Atlantic Coast Flatwoods
Landform: Flood plains
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 8 inches—yellowish brown loam

Subsoil:
8 to 20 inches—brown loam that has yellow mottles
20 to 34 inches—mottled yellowish brown, dark brown, and light gray loam
34 to 43 inches—mottled strong brown, very pale brown, and light gray clay loam
43 to 66 inches—light brownish gray clay loam that has brown mottles

Inclusions

Similar (less than 10 percent of map unit):
- The well drained Emporia, Cowarts, and Nankin soils in the higher landscape positions

- The well drained Riverview soils in the lower landscape positions
- Small areas that are clayey in the lower part of the subsoil
- Small areas that have more than 10 percent gravel in the surface layer, in the lower part of the subsoil, and in the substratum

Dissimilar (less than 10 percent of map unit):
- The somewhat excessively drained Tarboro, the somewhat poorly drained Chenneby, and the poorly drained Chastain soils in the slightly lower landscape positions
- The well drained Ailey soils and the somewhat excessively drained Alaga soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: Greater than 6 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally impractical.
- The effects of flooding can be reduced by planting crops that have a short growing season and can be planted after the flooding in spring and harvested before the flooding in fall and winter.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Flooding and wetness
Management measures and considerations:
- Reducing the flooding hazard on this soil is generally not economically feasible.
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine, sweetgum, and yellow-poplar
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, and harvesting trees during dry periods help to reduce the equipment limitation.

- Reducing the flooding hazard on this soil is generally not economically feasible.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Flooding and wetness
Management measures and considerations:

- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for urban development.

CmA—Clayham loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Stream terraces adjacent to the Pee Dee River flood plain and stream terraces of large creeks
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 4 inches—reddish brown loam

Subsoil:
4 to 46 inches—red clay and clay loam
46 to 65 inches—yellow sandy clay loam and loam

Inclusions

Similar (less than 10 percent of map unit):

- The well drained Emporia, Cowarts, and Nankin soils in the higher landscape positions
- The well drained Riverview soils in the lower landscape positions
- The well drained Wickham soils in landscape positions similar to those of the Clayham soil
- Small areas that are clayey in the lower part of the subsoil
- Small areas that have as much as 10 percent gravel in the surface layer, in the lower part of the subsoil, and in the substratum

Dissimilar (less than 10 percent of map unit):

- The somewhat excessively drained Tarboro, the somewhat poorly drained Chenneby, and the poorly drained Chastain soils in the slightly lower landscape positions
- The well drained Ailey soils and the excessively drained Alaga soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained

Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Using wider tires on equipment and harvesting trees during dry periods help to reduce the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Moderately slow permeability
Management measures and considerations:
- Increasing the size of the absorption field helps to reduce the permeability limitation.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Flooding

Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for lawns and landscaping.

CmB—Clayham loam, 2 to 6 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Stream terraces adjacent to the Pee Dee River flood plain and stream terraces of large creeks
Slope length: Typically 100 to 200 feet, ranging from 50 to 250 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 4 inches—reddish brown loam

Subsoil:
4 to 46 inches—red clay and clay loam
46 to 59 inches—yellow sandy clay loam and loam

Substratum:
59 to 65 inches—yellow loam

Inclusions

Similar (less than 10 percent of map unit):
- The well drained Emporia, Cowarts, and Nankin soils in the higher landscape positions
- The well drained Riverview soils in the lower landscape positions
- The well drained Wickham soils in landscape positions similar to those of the Clayham soil
- Small areas that are clayey in the lower part of the subsoil
- Small areas that have as much as 10 percent gravel in the surface layer, in the lower part of the subsoil, and in the substratum

Dissimilar (less than 10 percent of map unit):
- The somewhat excessively drained Tarboro, the somewhat poorly drained Chenneby, and the poorly drained Chastain soils in the slightly lower landscape positions
- The well drained Ailey soils and the somewhat excessively drained Alaga soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: High
Slope class: Gently sloping
Hazard of water erosion: Medium
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, the use of cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Using wider tires on equipment and harvesting trees during dry periods help to reduce the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Moderately slow permeability
Management measures and considerations:
- Increasing the size of the absorption field helps to reduce the permeability limitation.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: None

CnB2—Clayham clay loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Stream terraces adjacent to the Pee Dee River flood plain and stream terraces of large creeks
Slope length: Typically 100 to 200 feet, ranging from 50 to 250 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 5 inches—reddish brown clay loam

Subsoil:
5 to 30 inches—red and yellowish red clay
30 to 55 inches—yellowish red clay loam

Substratum:
55 to 65 inches—yellowish brown sandy loam

Inclusions

Similar (less than 10 percent of map unit):
- The well drained Emporia, Cowarts, and Nankin soils in the higher landscape positions
- The well drained Riverview soils in the lower landscape positions
- The well drained Wickham soils in landscape positions similar to those of the Clayham soil
- Small areas that are clayey in the lower part of the subsoil
- Small areas that have as much as 10 percent gravel in the surface layer, in the lower part of the subsoil, and in the substratum

Dissimilar (less than 10 percent of map unit):
- The somewhat excessively drained Tarboro, the somewhat poorly drained Chenneby, and the poorly drained Chastain soils in the slightly lower landscape positions
- The well drained Ailey and the somewhat excessively drained Alaga soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Medium
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, the use of cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Erosion

Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Using wider tires on equipment and harvesting trees during dry periods help to reduce the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Moderately slow permeability
Management measures and considerations:
- Increasing the size of the absorption field helps to reduce the permeability limitation.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

CoC—Cowarts loamy sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 50 to 200 feet, ranging from 50 to 400 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown loamy sand

Subsurface layer:
5 to 9 inches—yellowish brown loamy sand

Subsoil:
9 to 22 inches—yellowish red sandy clay loam

Substratum:
22 to 72 inches—red sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The well drained Emporia soils in landscape positions similar to those of the Cowarts soil
- The moderately well drained Pelion soils in the lower landscape positions
- Small areas that have a clayey subsoil
- Small areas that have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey and Uchee soils in landscape positions similar to those of the Cowarts soil
- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: Moderate
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and some cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Erosion and slope
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, the use of cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Slope and erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine and longleaf pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate

Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness and slope
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

CoD—Cowarts loamy sand, 10 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 50 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown loamy sand

Subsurface layer:
5 to 9 inches—yellowish brown loamy sand

Subsoil:
9 to 22 inches—yellowish red sandy clay loam

Substratum:
22 to 72 inches—red sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The well drained Emporia soils in landscape positions similar to those of the Cowarts soil
- The moderately well drained Pelion soils in the lower landscape positions
- Small areas that have a clayey subsoil
- Small areas that have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey and Uchee soils in landscape positions similar to those of the Cowarts soil
- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: Moderate

Slope class: Strongly sloping
Hazard of water erosion: Medium
Surface runoff: High
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Slope and erosion

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Slope and erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine and longleaf pine
Management concerns: Plant competition
Management measures and considerations:
- Harvesting methods that disturb the soil as little as possible, such as locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways, moving logs on the contour, and plowing fire lanes on the contour, minimize the erosion hazard and help to reduce the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability and slope
Management measures and considerations:
- The permeability and slope limitations can be reduced by increasing the size of the absorption field and installing the absorption lines on the contour.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness and slope
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

CwC—Cowarts gravelly loamy sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 50 to 200 feet, ranging from 50 to 400 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown gravelly loamy sand

Subsurface layer:
5 to 9 inches—yellowish brown gravelly loamy sand

Subsoil:
9 to 22 inches—yellowish red sandy clay loam

Substratum:
22 to 72 inches—red sandy loam and coarse sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The well drained Emporia soils in landscape positions similar to those of the Cowarts soil
- Small areas that have a clayey subsoil
- Small areas that do not have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey and Uchee soils in landscape positions similar to those of the Cowarts soil
- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Erosion and gravel in the surface layer

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, the use of cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion and gravel in the surface layer
Management measures and considerations:
- Seedbeds should be prepared on the contour if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine and longleaf pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Small stones, droughtiness, and slope
Management measures and considerations:
- Proper fertilization, seeding, removing stones, mulching, and land shaping help to establish and maintain plant cover.

CwD—Cowarts gravelly loamy sand, 10 to 15 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 50 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown gravelly loamy sand

Subsurface layer:
5 to 9 inches—yellowish brown gravelly loamy sand

Subsoil:
9 to 22 inches—yellowish red sandy clay loam

Substratum:
22 to 72 inches—red sandy loam and coarse sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The well drained Emporia soils in landscape positions similar to those of the Cowarts soil
- Small areas that have a clayey subsoil
- Small areas that do not have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey and Uchee soils in landscape positions similar to those of the Cowarts soil
- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: Moderate
Slope class: Strongly sloping
Hazard of water erosion: Severe
Surface runoff: Rapid
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Erosion and gravel in the surface layer

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion and gravel in the surface layer
Management measures and considerations:
- Seedbeds should be prepared on the contour if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine and longleaf pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability and slope
Management measures and considerations:
- The permeability and slope limitations can be reduced by increasing the size of the absorption field and installing the absorption lines on the contour.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Small stones, droughtiness, and slope
Management measures and considerations:
- Proper fertilization, seeding, removing stones, mulching, and land shaping help to establish and maintain plant cover.

CwE—Cowarts gravelly loamy sand, 15 to 25 percent slopes

Setting

Major Land Resource Area: Carolina and Georgia Sand Hills
Slope length: Typically 50 to 200 feet, ranging from 50 to 350 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 30 to 50 acres, ranging from 5 to 250 acres

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown gravelly loamy sand

Subsurface layer:
5 to 9 inches—yellowish brown gravelly loamy sand

Subsoil:
9 to 22 inches—yellowish red sandy clay loam

Substratum:
22 to 72 inches—red sandy loam and coarse sandy loam

Inclusions

Similar (less than 20 percent of map unit):
- The well drained Emporia soils in landscape positions similar to those of the Cowarts soil
- Small areas that have a clayey subsoil
- Small areas that do not have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in the higher landscape positions
- The well drained Ailey and Uchee soils in landscape positions similar to those of the Cowarts soil

- The very poorly drained Pamlico and Johnston soils along narrow drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: Greater than 6 feet
Available water capacity: Moderate
Slope class: Steep
Hazard of water erosion: Severe
Surface runoff: High
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Erosion and gravel in the surface layer

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion and gravel in the surface layer
Management measures and considerations:
- Seedbeds should be prepared on the contour if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine and longleaf pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Harvesting methods that disturb the soil as little as possible, such as locating skid trails, log landings, and temporary logging roads so that they do not lead to drainageways, moving logs on the contour, and plowing fire lanes on the contour, minimize the erosion hazard.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability and slope
Management measures and considerations:
- The permeability and slope limitations can be reduced by increasing the size of the absorption field and installing the absorption lines on the contour.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Slope
Management measures and considerations:
- Proper fertilization, seeding, removing stones, mulching, and land shaping help to establish and maintain plant cover.

Cx—Coxville loam

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Broad nearly level flats, oval depressions, and shallow drainageways
Slope length: Typically 100 to 500 feet, ranging from 50 to 700 feet
Shape of areas: Irregular or oval
Size of areas: Typically 50 to 150 acres, ranging from 5 to 300 acres

Typical Profile

Surface layer:
0 to 6 inches—very dark gray loam

Subsoil:
6 to 19 inches—gray clay loam
19 to 72 inches—light gray and gray clay

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained McColl and Rains soils in landscape positions similar to those of the Coxville soil
- The somewhat poorly drained Lynchburg, Smithboro, and Ocilla soils in the higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderately slow
Depth to high water table: 0 to 1.0 foot
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Moderately low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the moderately slow permeability, shallow surface drains and open ditches are commonly used to control the water table.

- Returning crop residue to the soil helps to maintain good tilth and the organic matter content.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the difficulty and expense of reducing the wetness and permeability limitations, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

EmA—Emporia loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 125 to 250 feet, ranging from 50 to 300 feet
Landform: Areas near drainageways

Shape of areas: Irregular
Size of areas: Typically 25 to 40 acres, ranging from 10 to 80 acres

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown loamy sand

Subsoil:
4 to 21 inches—brownish yellow fine sandy loam
21 to 37 inches—yellowish brown sandy clay loam
37 to 45 inches—brownish yellow sandy clay that has red, yellow, and gray mottles
45 to 60 inches—mottled reddish yellow, red, and gray coarse sandy loam

Inclusions

Similar (about 10 percent of map unit):
- The well drained Noboco, Faceville, and Marlboro soils in the slightly higher landscape positions
- Small areas that have more than 10 percent gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The poorly drained Coxville, McColl, and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.0 to 4.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Low
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: None
Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine

Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

EmB—Emporia loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 125 to 250 feet, ranging from 50 to 300 feet
Landform: Areas near drainageways
Shape of areas: Irregular
Size of areas: Typically 60 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown loamy sand

Subsoil:
4 to 21 inches—brownish yellow fine sandy loam
21 to 37 inches—yellowish brown sandy clay loam
37 to 45 inches—brownish yellow sandy clay that has red, yellow, and gray mottles
45 to 60 inches—mottled reddish yellow, red, and gray coarse sandy loam

Inclusions

Similar (about 10 percent of map unit):
- The well drained Noboco, Faceville, and Marlboro soils in the slightly higher landscape positions
- The well drained Nankin soils on side slopes near drainageways
- Small areas that have more than 10 percent gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The poorly drained Coxville, McColl, and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.0 to 4.5 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, the use of cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

EmB2—Emporia sandy loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 125 to 250 feet, ranging from 50 to 300 feet
Landform: Areas near drainageways
Shape of areas: Irregular
Size of areas: Typically 60 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 3 inches—light yellowish brown sandy loam

Subsoil:
3 to 40 inches—yellowish brown sandy clay loam
40 to 48 inches—yellowish brown sandy clay loam that has red and gray mottles
48 to 55 inches—mottled red, yellow, and gray sandy loam
55 to 60 inches—stratified gray sandy loam and clay having red and brownish yellow mottles

Inclusions

Similar (about 10 percent of map unit):
- The well drained Noboco, Faceville, and Marlboro soils in the slightly higher landscape positions
- The well drained Nankin soils on side slopes near drainageways
- Small areas that have more than 10 percent gravel on the surface

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The poorly drained Coxville, McColl, and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.0 to 4.5 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed

waterways, the use of cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

EuA—Eunola loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Upland areas near stream terraces
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 75 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 5 inches—dark brown loamy sand

Subsoil:
5 to 20 inches—light yellowish brown sandy clay loam
20 to 42 inches—yellowish brown sandy clay loam that has gray and brownish yellow mottles

42 to 51 inches—yellowish brown sandy loam that has light gray mottles

Substratum:
51 to 60 inches—gray sand

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Emporia and Nankin soils in the higher landscape positions
- The moderately well drained Hornsville soils in landscape positions similar to those of the Eunola soil
- Small areas that have a gravelly surface layer

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Ogeechee soils in the lower landscape positions, in depressions, and along the edge of drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Depth to high water table: 1.5 to 2.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Low
Organic matter content: Low

Use and Management

Major Uses: Woodland and some cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help absorption fields to function properly.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Slight limitations

FaA—Faceville loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 175 acres

Typical Profile

Surface layer:
0 to 6 inches—yellowish red loamy sand

Subsoil:
6 to 60 inches—red clay

Inclusions

Similar (about 10 percent of map unit):
- The well drained Orangeburg soils in landscape positions similar to those of the Faceville soil
- The well drained Norfolk and Marlboro soils in the slightly lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The well drained Lucy soils in the slightly higher landscape positions
- The poorly drained Coxville and McColl soils and the somewhat poorly drained Smithboro soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: Greater than 6 feet
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and some woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Restrictive features: Slight limitations

FaB—Faceville loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 75 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—yellowish red loamy sand

Subsoil:
6 to 60 inches—red clay

Inclusions

Similar (less than 15 percent of map unit):
- The well drained Norfolk and Marlboro soils in the slightly lower landscape positions
- The well drained Emporia and Nankin soils on side slopes near drainageways and around the rims of Carolina bays

Dissimilar (0 to 10 percent of map unit):
- The well drained Lucy soils in the lower landscape positions
- The poorly drained Coxville and McColl soils and the somewhat poorly drained Smithboro soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained

Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: Greater than 6 feet
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland and some woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, the use of cover crops, and the inclusion of grasses and legumes in the cropping system help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Restrictive features: Slight limitations

FaB2—Faceville sandy clay loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 75 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 2 inches—yellowish red sandy clay loam

Subsoil:
2 to 60 inches—red clay that has yellow mottles

Inclusions

Similar (less than 15 percent of map unit):
- The well drained Norfolk and Marlboro soils in the slightly lower landscape positions
- The well drained Emporia and Nankin soils on side slopes near drainageways and around the rims of Carolina bays

Dissimilar (0 to 10 percent of map unit):
- The well drained Lucy soils in the slightly lower landscape positions
- The poorly drained Coxville and McColl soils and the somewhat poorly drained Smithboro soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: Greater than 6 feet
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Restrictive features: Slight limitations

FxB—Foxworth sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Areas around the rims of depressions
Slope length: Typically 100 to 150 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 9 inches—brown sand

Substratum:
9 to 27 inches—reddish yellow sand
27 to 40 inches—strong brown sand
40 to 70 inches—very pale brown sand that has gray mottles
70 to 80 inches—light gray sand

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Blanton and Candor soils in the slightly lower landscape positions
- The excessively drained Alpin soils in the higher landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways
- Small areas near Brownsville that have a dark horizon below a depth of 40 inches

Dissimilar (0 to 5 percent of map unit):
- The poorly drained Leon and Rains soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Very slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Truck crops
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent application of fertilizers are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

GoA—Goldsboro loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 5 inches—grayish brown loamy sand

Subsoil:
5 to 28 inches—brownish yellow sandy clay loam that has yellowish red mottles in the lower part
28 to 50 inches—yellowish brown sandy clay loam that has red, strong brown, and gray mottles
50 to 65 inches—mottled reddish yellow, gray, and red sandy clay loam

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat poorly drained Lynchburg soils in the slightly lower landscape positions
- The moderately well drained Persanti soils in landscape positions similar to those of the Goldsboro soil
- The well drained Noboco soils in the slightly higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Depth to high water table: 1.5 to 2.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops helps to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness

Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help absorption fields to function properly.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Slight limitations

HnA—Hornsville loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Nearly level areas, broad flats, and stream terraces adjacent to drainageways
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 80 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—brown loam

Subsoil:
6 to 26 inches—brownish yellow clay that has red and yellowish brown mottles in the lower part
26 to 38 inches—brownish yellow clay that has gray, yellow, and red mottles
38 to 47 inches—mottled yellow, yellowish brown, and red clay

Substratum:
47 to 68 inches—yellowish red sandy clay loam that has light gray mottles

Inclusions

Similar (less than 15 percent of map unit):
- The well drained Wickham soils in landscape positions similar to or slightly higher than those of the Hornsville soil
- The moderately well drained Eunola soils in landscape positions similar to those of the Hornsville soil
- The moderately well drained Persanti soils in the slightly higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The somewhat poorly drained Smithboro soils in the slightly lower landscape positions
- The poorly drained Coxville soils in the lower landscape positions and in depressions
- The poorly drained Chastain and Kinston soils on flood plains

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained

Permeability: Moderately slow
Depth to high water table: 2.5 to 3.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and some woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the moderately slow permeability, shallow surface drains and open ditches are commonly used to lower the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Slight limitations

HnB—Hornsville loam, 2 to 6 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Upland areas and side slopes adjacent to drainageways
Slope length: Typically 100 to 300 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 80 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—brown loam

Subsoil:
6 to 26 inches—brownish yellow clay that has red and yellowish brown mottles in the lower part
26 to 38 inches—brownish yellow clay that has gray, yellow, and red mottles
38 to 47 inches—mottled yellow, yellowish brown, and red clay

Substratum:
47 to 68 inches—yellowish red sandy clay loam that has light gray mottles

Inclusions

Similar (0 to 15 percent of map unit):
- The well drained Emporia and Nankin soils in landscape positions similar to those of the Hornsville soil
- The well drained Clayham and Wickham soils in the slightly lower landscape positions

Dissimilar (less than 10 percent of map unit):
- The poorly drained Coxville soils in the lower landscape positions and in depressions
- The poorly drained Chastain and Kinston soils on flood plains

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Depth to high water table: 2.5 to 3.5 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Low
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Erosion

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Slight limitations

HnB2—Hornsville sandy clay loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Upland areas and side slopes adjacent to drainageways
Slope length: Typically 100 to 300 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 80 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—yellowish red sandy clay loam

Subsoil:
6 to 18 inches—brownish yellow clay that has red and yellowish brown mottles
18 to 32 inches—brownish yellow clay that has gray and red mottles
32 to 52 inches—gray clay that has red and yellow mottles

Substratum:
52 to 62 inches—mottled light gray and yellow sandy loam

Inclusions

Similar (less than 25 percent of map unit):
- The moderately well drained Persanti and the somewhat poorly drained Smithboro soils in nearly level areas
- The well drained Emporia and Nankin soils in landscape positions similar to those of the Hornsville soil
- Small areas that have a surface layer of loamy sand
- Areas that have more than 15 percent gravel in the surface layer
- Areas that do not have a greater than 20 percent decrease in clay content within a depth of 60 inches

Dissimilar (less than 5 percent of map unit):
- The poorly drained Kinston and Chastain soils on flood plains
- The moderately well drained Eunola soils on nearly level creek terraces

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Depth to high water table: 2.5 to 3.5 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition

Management measures and considerations:
- Removing excess water, using wider tires on equipment, and planting and harvesting trees during dry periods help to reduce the limitations.
- The control of competing vegetation is required for the growth of young seedlings.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Slight limitations

Jo—Johnston mucky loam, frequently flooded

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Flood plains
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 150 to 250 acres, ranging from 10 to 600 acres

Typical Profile

Surface layer:
0 to 40 inches—black mucky sandy loam and coarse sandy loam

Substratum:
40 to 52 inches—dark gray loamy coarse sand
52 to 60 inches—dark gray, gray, and light gray loamy coarse sand

Inclusions

Dissimilar (less than 10 percent of map unit):
- The very poorly drained Pamlico soils in landscape positions similar to those of the Johnston soil
- The very poorly drained Paxville and the poorly drained Kinston and Ogeechee soils in the higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Moderately rapid
High water table: 1.0 foot above the surface to 1.5 feet below

Available water capacity: Very high
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Very slow
Organic matter content: Very high
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Woodland
Trees to plant: Water-tolerant hardwoods
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for urban development.

Kn—Kinston loam, frequently flooded

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Flood plains
Slope length: Typically 100 to 300 feet, ranging from 50 to 1,000 feet
Shape of areas: Elongated
Size of areas: Typically 150 to 250 acres, ranging from 10 to 600 acres

Typical Profile

Organic layer:
3 inches to 0—dark brown partially decayed wood and cattails

Surface layer:
0 to 13 inches—dark gray loam

Substratum:
13 to 28 inches—gray and dark gray sandy clay loam
28 to 42 inches—gray clay loam
42 to 60 inches—dark gray and gray sand

Inclusions

Dissimilar (about 20 percent of map unit):
- The moderately well drained Eunola soils in the higher landscape positions
- Johnston and Pamlico soils in the slightly lower landscape positions
- The poorly drained Chastain and Ogeechee soils in landscape positions similar to those of the Kinston soil

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Depth to high water table: 0 to 1.0 foot
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Very slow
Organic matter content: Moderate
Flooding: Frequent

Use and Management

Major Uses: Woodland (fig. 4)

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: None
Management concerns: Flooding and wetness
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Woodland
Trees to plant: Water-tolerant hardwoods
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.

Figure 4.—Kinston loam, frequently flooded, has potential as good habitat for wetland wildlife.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Flooding and wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding and wetness limitations, this soil generally is not used for urban development.

Le—Leon sand

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Oval depressions, areas along shallow drainageways, and flood plains
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Oval or irregular
Size of areas: Typically 10 to 35 acres, ranging from 5 to 50 acres

Typical Profile

Surface layer:
0 to 3 inches—black sand

Subsurface layer:
3 to 28 inches—white sand

Subsoil:
28 to 40 inches—dark reddish brown sand

40 to 48 inches—dark brown sand

Substratum:
48 to 60 inches—light brownish gray sand

Inclusions

Dissimilar (less than 15 percent of map unit):
- The poorly drained Ogeechee and Rains soils in landscape positions similar to those of the Leon soil
- Soils that have a surface layer more than 10 inches thick

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderately rapid
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Slow
Organic matter content: Low or moderate

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, wheat, and blueberries (fig. 5)
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soil has drained sufficiently.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.

Figure 5.—Leon sand is well suited to the production of blueberries.

- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- Because of the wetness limitation, this soil generally is not used for onsite sewage disposal systems.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

LuB—Lucy sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 50 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 8 inches—dark brown sand

Subsurface layer:
8 to 22 inches—light yellowish brown sand

Subsoil:
22 to 31 inches—yellowish brown sandy loam
31 to 39 inches—red sandy loam
39 to 67 inches—red sandy clay loam

Inclusions

Similar (less than 15 percent of map unit):
- The well drained Bonneau, Uchee, and Wagram soils and the somewhat excessively drained Blanton and Troup soils in landscape positions similar to those of the Lucy soil

Dissimilar (0 to 15 percent of map unit):
- The well drained Emporia, Faceville, Nankin, and Noboco soils in the slightly lower landscape positions
- Small areas that have less that 10 percent gravel on the surface

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: Greater than 6.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, tobacco, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to

increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bahiagrass and bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slight limitations

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

Ly—Lynchburg sandy loam

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Nearly level areas and slight depressions
Slope length: Typically 100 to 300 feet, ranging from 50 to 450 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 75 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 11 inches—dark gray sandy loam

Subsoil:
11 to 17 inches—pale brown sandy loam that has yellow and brownish gray mottles

17 to 26 inches—mottled light yellowish brown and light brownish gray sandy clay loam that has strong brown mottles
26 to 60 inches—gray sandy clay loam that has reddish yellow and brownish yellow mottles

Inclusions

Similar (less than 15 percent of map unit):
- The moderately well drained Goldsboro soils in the slightly higher landscape positions
- The somewhat poorly drained Smithboro soils in landscape positions similar to those of the Lynchburg soil

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Coxville, Rains, and McColl soils in the slightly lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Grazing should be delayed until the soil has drained sufficiently.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.

- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help absorption fields to function properly.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

MaA—Marlboro fine sandy loam, moderately wet, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 5 inches—brown fine sandy loam

Subsurface layer:
5 to 7 inches—light yellowish brown fine sandy loam

Subsoil:
7 to 15 inches—brownish yellow clay
15 to 53 inches—brownish yellow clay and clay loam having yellowish red and red mottles
53 to 63 inches—mottled brownish yellow, red, and gray clay
63 to 70 inches—mottled brownish yellow, yellow, red, and gray clay loam

Inclusions

Similar (about 0 to 10 percent of map unit):
- The well drained Norfolk, Faceville, and Noboco soils in landscape positions similar to those of the Marlboro soil

Dissimilar (about 0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions
- The moderately well drained Persanti and the somewhat poorly drained Smithboro soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns:
- This soil has no major management problems affecting woodland.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness and slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

MaB—Marlboro fine sandy loam, moderately wet, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 75 to 100 feet, ranging from 50 to 150 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 5 inches—brown fine sandy loam

Subsurface layer:
5 to 7 inches—light yellowish brown fine sandy loam

Subsoil:
7 to 15 inches—brownish yellow clay
15 to 53 inches—brownish yellow clay and clay loam having yellowish red and red mottles
53 to 63 inches—mottled brownish yellow, red, and gray clay
63 to 70 inches—mottled brownish yellow, yellow, red, and gray clay loam

Inclusions

Similar (about 0 to 10 percent of map unit):
- The well drained Norfolk, Faceville, and Noboco soils in landscape positions similar to those of the Marlboro soil

Dissimilar (about 0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions
- The moderately well drained Persanti and the somewhat poorly drained Smithboro soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass

Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns:
- This soil has no major management problems affecting woodland.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness and slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

Mc—McColl loam

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Oval depressions and nearly level areas
Slope length: Typically 100 to 500 feet, ranging from 50 to 700 feet
Shape of areas: Oval
Size of areas: Typically 50 to 150 acres, ranging from 5 to 300 acres

Typical Profile

Surface layer:
0 to 9 inches—very dark gray loam

Subsoil:
9 to 17 inches—gray sandy clay that has pale brown and yellowish brown mottles
17 to 26 inches—brownish yellow sandy clay loam that has gray and strong brown mottles
26 to 37 inches—gray sandy clay loam that has brownish yellow, red, and reddish yellow mottles
37 to 43 inches—gray sandy clay that has reddish yellow, red, and gray mottles

Substratum:
43 to 48 inches—reddish yellow sandy loam
48 to 85 inches—mottled gray and reddish yellow sandy loam and sandy clay loam

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Coxville and Rains soils in landscape positions similar to those of the McColl soil

- The somewhat poorly drained Lynchburg, Ocilla, and Smithboro soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Slow
High water table: 1.0 foot above the surface to 1.0 foot below
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Ponded
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness and slow permeability (fig. 6)
Management measures and considerations:
- Because of the slow permeability, shallow surface drains and open ditches are commonly used to control the water table.
- Returning crop residue to the soil helps to maintain good tilth and the organic matter content.

Figure 6.—Wetness is the main limitation affecting crop production on McColl loam.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Ponding and slow permeability
Management measures and considerations:
- Because of the difficulty and expense of reducing the ponding and permeability limitations, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Ponding
Management measures and considerations:
- The ponding limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Ponding
Management measures and considerations:
- The ponding limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

NaB—Nankin loamy fine sand, 2 to 6 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Side slopes leading to drainageways and stream terraces adjacent to flood plains
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet

Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 65 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—light yellowish brown loamy fine sand

Subsoil:
6 to 10 inches—reddish yellow sandy clay
10 to 27 inches—yellowish red clay that has red mottles
27 to 36 inches—yellowish red clay that has brownish yellow mottles
36 to 47 inches—yellowish red clay
47 to 57 inches—mottled brownish yellow and yellowish red sandy clay that has light gray mottles

Substratum:
57 to 65 inches—mottled reddish yellow, red, light gray, and yellow sandy clay loam

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Norfolk, Noboco, Faceville, and Marlboro soils in the slightly higher landscape positions
- The well drained Emporia and Hornsville soils in landscape positions similar to those of the Nankin soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The poorly drained Coxville, McColl, and Rains soils in depressions
- Small areas that have more than 10 percent gravel on the surface

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass

Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

NbB2—Nankin sandy clay loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Side slopes leading to drainageways and stream terraces adjacent to flood plains
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 65 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 5 inches—yellowish brown sandy clay loam

Subsoil:
5 to 25 inches—red clay
25 to 49 inches—yellowish red clay
49 to 52 inches—mottled yellowish red, red, and gray clay
52 to 62 inches—mottled red, yellow, and gray sandy clay loam and clay loam

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Norfolk, Noboco, Faceville, and Marlboro soils in the slightly higher landscape positions

- The well drained Emporia and the moderately well drained Hornsville soils in landscape positions similar to those of the Nankin soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Wagram and Bonneau soils in the higher landscape positions
- The well drained Uchee soils on side slopes near drainageways
- The poorly drained Coxville, McColl, and Rains soils in depressions
- Small areas that have more than 10 percent gravel on the surface

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

NbC2—Nankin sandy clay loam, 6 to 10 percent slopes, eroded

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Side slopes leading to drainageways and stream terraces adjacent to flood plains
Slope length: Typically 100 to 200 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 65 acres, ranging from 5 to 150 acres

Typical Profile

Surface layer:
0 to 5 inches—yellowish brown sandy clay loam

Subsoil:
5 to 25 inches—red clay
25 to 49 inches—yellowish red clay
49 to 52 inches—mottled yellowish red, red, and gray clay
52 to 62 inches—mottled red, yellow, and gray sandy clay loam and clay loam

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Emporia soils in landscape positions similar to those of the Nankin soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Uchee soils on side slopes near drainageways
- Small areas that have more than 10 percent gravel on the surface

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Moderately sloping
Hazard of water erosion: Severe
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Moderately slow permeability
Management measures and considerations:
- The permeability limitation can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- Proper fertilization, seeding, mulching, and land shaping help to establish and maintain plant cover.

NcA—Noboco loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 400 feet, ranging from 50 to 800 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown loamy sand

Subsurface layer:
6 to 13 inches—light yellowish brown loamy sand

Subsoil:
13 to 38 inches—yellowish brown and brownish yellow sandy clay loam that has strong brown mottles
38 to 48 inches—brownish yellow sandy clay loam that has red and grayish brown mottles
48 to 62 inches—mottled light yellowish brown, yellowish red, and gray sandy clay loam

Inclusions

Similar (about 0 to 10 percent of map unit):
- The well drained Norfolk, Faceville, and Marlboro soils in the higher landscape positions

Dissimilar (about 0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions
- The moderately well drained Goldsboro soils in the lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 2.5 to 4.0 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: None
Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition

Management measures and considerations:
• Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
• The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

NcB—Noboco loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 75 to 100 feet, ranging from 50 to 150 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown loamy sand

Subsurface layer:
6 to 13 inches—light yellowish brown loamy sand

Subsoil:
13 to 38 inches—yellowish brown and brownish yellow sandy clay loam that has strong brown mottles
38 to 48 inches—brownish yellow sandy clay loam that has red and grayish brown mottles
48 to 62 inches—mottled light yellowish brown, yellowish red, and gray sandy clay loam

Inclusions

Similar (about 0 to 10 percent of map unit):
• The well drained Norfolk, Faceville, and Marlboro soils in the higher landscape positions

Dissimilar (about 0 to 10 percent of map unit):
• The poorly drained Coxville and McColl soils in depressions
• The moderately well drained Goldsboro soils in the lower landscape positions
• The well drained Bonneau and Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate

Depth to high water table: 2.5 to 4.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

NcB2—Noboco sandy loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 75 to 100 feet, ranging from 50 to 150 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 75 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown loamy sand

Subsurface layer:
6 to 13 inches—light yellowish brown loamy sand

Subsoil:
13 to 38 inches—yellowish brown and brownish yellow sandy clay loam that has strong brown mottles
38 to 48 inches—brownish yellow sandy clay loam that has red and grayish brown mottles
48 to 62 inches—mottled light yellowish brown, yellowish red, and gray sandy clay loam

Inclusions

Similar (about 0 to 10 percent of map unit):
- The well drained Norfolk, Faceville, and Marlboro soils in the higher landscape positions

Dissimilar (about 0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions
- The moderately well drained Goldsboro soils in the lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 2.5 to 4.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

NoA—Norfolk loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish brown loamy sand

Subsurface layer:
7 to 15 inches—light yellowish brown loamy sand

Subsoil:
15 to 63 inches—yellowish brown and brownish yellow sandy clay loam that has reddish and brownish mottles in the lower part
63 to 72 inches—mottled brownish yellow, red, and gray sandy clay loam

Inclusions

Similar (about 0 to 10 percent of map unit):
- The well drained Faceville and Marlboro soils in landscape positions similar to those of the Norfolk soil
- The well drained Noboco soils in the lower landscape positions

Dissimilar (about 0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions
- The moderately well drained Goldsboro soils in the slightly lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained

Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland

Suitable crops: Cotton (fig. 7), soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture

Suitable grasses: Bermudagrass and bahiagrass
Management concerns: None

Figure 7.—Cotton on Norfolk loamy sand, 0 to 2 percent slopes.

Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

NoB—Norfolk loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 75 to 100 feet, ranging from 50 to 150 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish brown loamy sand

Subsurface layer:
7 to 15 inches—light yellowish brown loamy sand

Subsoil:
15 to 63 inches—yellowish brown and brownish yellow sandy clay loam that has reddish and brownish mottles in the lower part
63 to 72 inches—mottled brownish yellow, red, and gray sandy clay loam

Inclusions

Similar (about 0 to 10 percent of map unit):
- The well drained Faceville and Marlboro soils in landscape positions similar to those of the Norfolk soil
- The well drained Noboco soils in the lower landscape positions

Dissimilar (about 0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions
- The moderately well drained Goldsboro soils in the slightly lower landscape positions

- The well drained Bonneau and Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

NrB2—Norfolk sandy clay loam, 2 to 6 percent slopes, eroded

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 75 to 100 feet, ranging from 50 to 150 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 20 acres, ranging from 5 to 30 acres

Typical Profile

Surface layer:
0 to 3 inches—yellowish brown sandy clay loam

Subsoil:
3 to 34 inches—strong brown sandy clay loam
34 to 48 inches—yellowish brown sandy clay loam
48 to 66 inches—brownish yellow sandy clay loam that has strong brown mottles

Substratum:
66 to 72 inches—brownish yellow sandy loam that has light gray mottles

Inclusions

Similar (about 0 to 10 percent of map unit):
- The well drained Faceville and Marlboro soils in landscape positions similar to those of the Norfolk soil
- The well drained Noboco soils in the lower landscape positions

Dissimilar (about 0 to 10 percent of map unit):
- The poorly drained Coxville and McColl soils in depressions
- The moderately well drained Goldsboro soils in the slightly lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: 4.0 to 6.0 feet
Available water capacity: Moderate
Slope class: Gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Erosion
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing

grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Restrictive features: Slight limitations

OcB—Ocilla sand, 0 to 4 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Nearly level areas, oval depressions, and stream terraces
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 10 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 9 inches—dark grayish brown sand

Subsurface layer:
9 to 18 inches—pale brown sand
18 to 23 inches—gray sand

Subsoil:
23 to 60 inches—light brownish gray sandy clay loam that has brownish yellow and reddish yellow mottles

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat excessively drained Blanton and the well drained Autryville and Bonneau soils in the higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Rains and Coxville soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Moderate
Depth to high water table: 1.0 to 2.5 feet
Available water capacity: Slow
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and some cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by specially designing a septic system.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Wetness

Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

Og—Ogeechee sandy loam

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Stream terraces, oval depressions, and areas along drainageways
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Oval or irregular
Size of areas: Typically 50 to 75 acres, ranging from 5 to 200 acres

Typical Profile

Surface layer:
0 to 9 inches—very dark gray sandy loam

Subsoil:
9 to 56 inches—gray sandy clay loam that has yellow mottles
56 to 62 inches—light gray sandy loam

Substratum:
62 to 70 inches—light gray sand

Inclusions

Similar (less than 15 percent of map unit):
- The poorly drained Leon and Rains soils in landscape positions similar to those of the Ogeechee soil
- The poorly drained Kinston soils in drainageways
- The very poorly drained Paxville soils in the lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The somewhat poorly drained Ocilla soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Depth to high water table: 0 to 1.0 foot
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, bedding, planting and harvesting trees during the drier periods, and controlling competing vegetation help to reduce the limitations.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- Because of the wetness limitation, this soil generally is not used for onsite sewage disposal systems.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

OrA—Orangeburg loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet

Shape of areas: Irregular
Size of areas: Typically 25 to 125 acres, ranging from 10 to 175 acres

Typical Profile

Surface layer:
0 to 7 inches—brown loamy sand

Subsurface layer:
7 to 17 inches—light yellowish brown loamy sand

Subsoil:
17 to 75 inches—red sandy clay loam

Inclusions

Similar (about 10 percent of map unit):
- The well drained Faceville soils in landscape positions similar to those of the Orangeburg soil
- The well drained Norfolk and Marlboro soils in the slightly lower landscape positions

Dissimilar (0 to 10 percent of map unit):
- The well drained Lucy soils in the slightly higher landscape positions
- The poorly drained Coxville and McColl soils in depressions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate
Depth to high water table: Greater than 6 feet
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, including burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Restrictive features: Slight limitations

Pa—Pamlico muck, frequently flooded

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Flood plains
Slope length: Typically 100 to 200 feet, ranging from 50 to 350 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 150 to 250 acres, ranging from 10 to 600 acres

Typical Profile

Organic layer:
0 to 20 inches—black muck
20 to 42 inches—dark grayish brown muck

Substratum:
42 to 60 inches—light gray sand

Inclusions

Similar (less than 10 percent of map unit):
- The very poorly drained Johnston soils in landscape positions similar to those of the Pamlico soil
- Small areas that have clayey or loamy underlying material

Dissimilar (0 to 15 percent of map unit):
- The poorly drained Kinston soils in landscape positions similar to those of the Pamlico soil

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Moderate
Depth to high water table: 0 to 1.0 foot
Available water capacity: Very high
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Ponded
Organic matter content: Very high
Flooding: Frequent

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Flooding

Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Hayland and pasture
Suitable grasses: None
Management concerns: Flooding
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally not economically feasible.

Woodland
Trees to plant: Water-tolerant hardwoods
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for urban development.

Pe—Paxville fine sandy loam

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Nearly level areas, oval depressions, and areas along drainageways
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 75 acres, ranging from 5 to 125 acres

Typical Profile

Surface layer:
0 to 14 inches—black fine sandy loam

Subsoil:
14 to 23 inches—gray sandy clay loam
23 to 38 inches—light brownish gray sandy clay loam
38 to 45 inches—grayish brown sandy loam that has pale brown mottles

Substratum:
45 to 60 inches—light gray sand

Inclusions

Similar (less than 25 percent of map unit):
- The very poorly drained Johnston soils in landscape positions similar to those of the Paxville soil
- The poorly drained Ogeechee soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Very poorly drained
Permeability: Moderate
High water table: 1.0 foot above the surface to 1.0 foot below
Available water capacity: High
Slope class: Nearly level
Hazard of water erosion: None
Surface runoff: Very slow
Organic matter content: High
Flooding: Rare

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by maintaining open ditches and surface drains.
- Grazing should be delayed until the soil has drained sufficiently.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and planting and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- The control of competing vegetation is required for the growth of young seedlings.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Ponding and flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the ponding and flooding limitations, this soil generally is not used for urban development.

PnA—Pelion loamy sand, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 20 to 35 acres, ranging from 5 to 60 acres

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown loamy sand

Subsurface layer:
6 to 14 inches—pale brown loamy sand

Subsoil:
14 to 24 inches—light yellowish brown sandy clay loam that has pale brown mottles
24 to 37 inches—brownish yellow sandy clay loam that has light yellowish brown and light gray mottles
37 to 44 inches—mottled light gray, brownish yellow, and reddish brown clay loam and sandy clay loam having brittleness in the yellow and brown part
44 to 57 inches—mottled light gray, brownish yellow, and red sandy loam and sandy clay loam having brittleness in the yellow and brown part

Substratum:
57 to 63 inches—light gray sandy loam that has brownish yellow and red mottles

Inclusions

Similar (less than 15 percent of map unit):
- The well drained Cowarts and Emporia soils in the higher landscape positions
- Small areas that have more than 35 percent clay in the upper part of the subsoil
- Small areas that have more than 15 percent gravel in the surface layer

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils and the well drained Ailey soils in the higher landscape positions
- The poorly drained Ogeechee soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils in drainageways
- Small sandy areas
- Small areas that have more than 15 percent gravel in the surface layer

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow or slow
Depth to high water table: 1.0 to 2.5 feet
Slope class: Nearly level
Hazard of water erosion: Slight
Available water capacity: Moderate
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- Wetness can be reduced by installing a drainage system.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness in the surface layer
Management measures and considerations:
- The droughtiness limitation can be reduced by providing supplemental irrigation during dry periods.

PnB—Pelion loamy sand, 2 to 6 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain

Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 50 to 65 acres, ranging from 5 to 100 acres

Typical Profile

Surface layer:
0 to 6 inches—dark grayish brown loamy sand

Subsurface layer:
6 to 14 inches—pale brown loamy sand

Subsoil:
14 to 24 inches—light yellowish brown sandy clay loam that has pale brown mottles
24 to 37 inches—brownish yellow sandy clay loam that has light yellowish brown and light gray mottles
37 to 44 inches—mottled light gray, brownish yellow, and reddish brown clay loam and sandy clay loam having brittleness in the yellow and brown part
44 to 57 inches—mottled light gray, brownish yellow, and red sandy loam and sandy clay loam having brittleness in the yellow and brown part

Substratum:
57 to 63 inches—light gray sandy loam that has brownish yellow and red mottles

Inclusions

Similar (less than 15 percent of map unit):
- The well drained Cowarts and Emporia soils in the higher landscape positions
- Small areas that have more than 35 percent clay in the upper part of the subsoil

Dissimilar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor and the well drained Ailey soils in landscape positions similar to those of the Pelion soil
- The poorly drained Ogeechee soils in the lower landscape positions
- The very poorly drained Pamlico and Johnston soils along drainageways
- Small sandy areas
- Small areas that have more than 15 percent gravel in the surface layer

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow or slow
Depth to high water table: 1.0 to 2.5 feet
Slope class: Gently sloping
Hazard of water erosion: Moderate
Available water capacity: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: Corn, soybeans, and wheat
Management concerns: Erosion

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, terraces, grassed waterways, cover crops, and crop residue management help to reduce runoff and control erosion.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Erosion
Management measures and considerations:
- Seedbeds should be prepared on the contour or across the slope if possible.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth and compact subsoil.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- Wetness can be reduced by installing a drainage system.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Wetness and droughtiness
Management measures and considerations:
- The wetness and droughtiness limitations can be reduced by providing supplemental irrigation during dry periods and installing a drainage system.

PrA—Persanti loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Nearly level areas and old stream terraces
Slope length: Typically 100 to 450 feet, ranging from 50 to 500 feet
Shape of areas: Irregular

Size of areas: Typically 10 to 150 acres, ranging from 10 to 300 acres

Typical Profile

Surface layer:
0 to 7 inches—brown loam

Subsoil:
7 to 23 inches—brownish yellow clay
23 to 49 inches—brownish yellow clay that has yellowish red, red, and gray mottles
49 to 60 inches—mottled gray, yellow, yellowish red, and red clay

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Goldsboro soils in landscape positions similar to those of the Persanti soil
- The somewhat poorly drained Smithboro soils in the lower landscape positions
- The moderately well drained Hornsville soils near drainageways

Dissimilar (0 to 10 percent of map unit):
- The well drained Marlboro and Noboco soils in the higher landscape positions
- The poorly drained Coxville and McColl soils in depressions
- Small areas that have more than 10 percent gravel on the surface
- Small areas that have an eroded surface layer

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderately slow
Depth to high water table: 1.5 to 2.5 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, tobacco, and wheat
Management concerns: Wetness and moderately slow permeability
Management measures and considerations:
- Because of the moderately slow permeability, shallow surface drains and open ditches are commonly used to lower the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Drainage can be provided by maintaining open ditches and surface drains.
- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The shallow placement of filter lines, the use of fill material, or other alternate systems help to reduce the wetness limitation.
- Increasing the size of the absorption field helps to reduce the permeability limitation.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Restrictive features: Slight limitations

Qz—Quartzipsamments, sloping

Setting

Major Land Resource Area: Southern Coastal Plain
Shape of areas: Irregular
Size of areas: Typically 50 to 100 acres, ranging from 3 to 200 acres

Typical Profile

Quartzipsamments consist of areas where the soil material has been deposited, disturbed, or removed by machinery to a depth of more than 2 feet for commercial use or for use as fill material. The material is generally sand or loamy sand and is variable in color.

Inclusions

Similar (less than 25 percent of map unit):
- Udorthents in landscape positions similar to those of Quartzipsamments

Dissimilar (less than 10 percent of map unit):
- Orangeburg soils in landscape positions similar to those of Quartzipsamments
- Lucy and Troup soils in the slightly higher landscape positions

Soil Properties and Qualities

Because the characteristics of this map unit are so variable, onsite investigation is needed to determine the soil properties.

Use and Management

Major Uses: Building materials

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Slope, droughtiness.
Management measures and considerations:
- Land shaping is needed for crop production.

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Land shaping is needed for pasture production.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- Land shaping and the use of tracked or wide-tired vehicles help to reduce the equipment limitation.
- The moderate seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Droughtiness
Management measures and considerations:
- Onsite investigation is needed to determine the suitability of a site for any proposed use.

Ra—Rains sandy loam

Setting

Major Land Resource Area: Southern Coastal Plain
Landform: Nearly level areas, oval depressions, and areas along shallow drainageways
Slope length: Typically 100 to 300 feet, ranging from 50 to 500 feet
Shape of areas: Oval or irregular
Size of areas: Typically 50 to 150 acres, ranging from 5 to 300 acres

Typical Profile

Surface layer:
0 to 6 inches—very dark grayish brown sandy loam

Subsoil:
6 to 65 inches—gray sandy clay loam that has yellowish red and brownish yellow mottles

Inclusions

Similar (less than 10 percent of map unit):
- The poorly drained Coxville and McColl soils in landscape positions similar to those of the Rains soil
- The somewhat poorly drained Lynchburg and Ocilla soils in the higher landscape positions
- The very poorly drained Paxville soils in the lower landscape positions
- Small areas of soils that have a spodic horizon below the surface horizon

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Depth to high water table: 0 to 1.0 foot
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Wetness
Management measures and considerations:
- Surface drains, open ditches, and tile drainage help to control the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches, surface drains, or a combination of these.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- The seedling mortality rate can be reduced by planting suitable species at the proper times and by planting on raised beds.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- Because of the difficulty and expense of reducing the wetness limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding suitable fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

Rv—Riverview fine sandy loam, occasionally flooded

Setting

Major Land Resource Areas: Southern Coastal Plain and Atlantic Coast Flatwoods
Landform: Flood plains and natural levees along rivers and large creeks
Slope length: Typically 100 to 200 feet, ranging from 50 to 500 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 150 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 11 inches—brown fine sandy loam

Subsoil:
11 to 26 inches—yellowish brown fine sandy loam
26 to 36 inches—strong brown sandy loam

Substratum:
36 to 72 inches—brown and strong brown fine sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat poorly drained Chenneby soils in the lower landscape positions

Dissimilar (0 to 5 percent of map unit):
- The somewhat excessively drained Tarboro soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate

Depth to high water table: 3.0 to 5.0 feet
Slope class: Nearly level
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low
Flooding: Occasional (fig. 8)

Use and Management

Major Uses: Woodland and cropland

Agricultural Development

Cropland

Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Flooding
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally impractical.
- The effects of flooding can be reduced by planting crops that have a short growing season and can be planted after the flooding in spring and harvested before the flooding in fall and winter.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture

Suitable grasses: Bahiagrass
Management concerns: Flooding
Management measures and considerations:
- Protecting areas of this map unit from flooding is generally impractical.

Figure 8.—Flooding during periods of heavy rainfall in an area of Riverview fine sandy loam, occasionally flooded.

- Proper stocking rates, pasture rotation, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Seedlings survive and grow well if competing vegetation is controlled.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Degree of limitations: Severe
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for urban development.

Sm—Smithboro silt loam

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Nearly level areas and terraces near large streams
Slope length: Typically 100 to 300 feet, ranging from 50 to 450 feet
Shape of areas: Irregular
Size of areas: Typically 10 to 60 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 5 inches—dark gray silt loam

Subsoil:
5 to 13 inches—light yellowish brown clay loam that has brownish yellow and gray mottles
13 to 65 inches—gray clay that has red and yellowish red mottles

Inclusions

Similar (0 to 10 percent of map unit):
- The moderately well drained Persanti and Goldsboro soils in the higher landscape positions

Dissimilar (0 to 10 percent of map unit):
- The poorly drained Coxville soils in depressions and along shallow drainageways
- The poorly drained Chastain and Kinston soils on flood plains

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat poorly drained
Permeability: Slow
Depth to high water table: 0.5 foot to 1.5 feet
Available water capacity: Moderate
Slope class: Nearly level

Hazard of water erosion: None
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland, pasture, and cropland

Agricultural Development

Cropland
Suitable crops: Corn and soybeans
Management concerns: Wetness (fig. 9)
Management measures and considerations:
- Because of the slow permeability, shallow surface drains and open ditches are commonly used to lower the water table.
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Wetness
Management measures and considerations:
- Surface drainage is needed and can be provided by open ditches or surface drains.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Figure 9.—Wetness is a management concern on Smithboro silt loam during the harvest of crops.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, windthrow hazard, and plant competition
Management measures and considerations:
- Removing excess water, using wider tires on equipment, and harvesting trees during dry periods help to reduce the equipment limitation.
- Seedlings survive and grow well if competing vegetation is controlled.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.
- Trees are subject to windthrow when winds are strong because of the restricted rooting depth resulting from the high water table.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by adding fill material, land shaping so that excess surface water is removed, and installing a drainage system.

Lawns and landscaping
Degree of limitations: Severe
Restrictive features: Wetness
Management measures and considerations:
- The wetness limitation can be reduced by installing artificial drainage systems, land shaping so that runoff is increased, and selecting plants that can tolerate a high water table.

TbB—Tarboro sand, 0 to 4 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Areas along the Great Pee Dee River
Slope length: Typically 100 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 10 to 30 acres, ranging from 5 to 80 acres

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown sand

Substratum:
7 to 18 inches—yellowish brown sand
18 to 48 inches—reddish yellow sand
48 to 80 inches—very pale brown sand

Inclusions

Similar (less than 10 percent of map unit):
- The somewhat excessively drained Alaga soils in the higher landscape positions

Dissimilar (0 to 15 percent of map unit):
- The somewhat poorly drained Chenneby soils, the poorly drained Chastain soils, and the well drained Riverview soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid
Depth to high water table: Greater than 6 feet
Available water capacity: Slow
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None
Management concerns: Droughtiness, low nutrient-holding capacity, soil blowing, and flooding

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness, low nutrient-holding capacity, and flooding
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation and seedling mortality
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for septic tank absorption fields.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used for dwellings.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

TrB—Troup sand, 0 to 6 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 8 inches—brown sand

Subsurface layer:
8 to 23 inches—light yellowish brown sand
23 to 58 inches—reddish yellow sand

Subsoil:
58 to 80 inches—red sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in landscape positions similar to those of the Troup soil
- The well drained Lucy, Bonneau, and Wagram soils in the lower landscape positions
- The well drained Bonneau and Uchee soils on side slopes near drainageways

Dissimilar (less than 10 percent of map unit):
- The well drained Cowarts soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid in the sandy horizons; moderate in the loamy subsoil
Depth to high water table: Greater than 6 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slight limitations

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

TrC—Troup sand, 6 to 10 percent slopes

Setting

Major Land Resource Areas: Carolina and Georgia Sand Hills and Southern Coastal Plain
Slope length: Typically 100 to 250 feet, ranging from 50 to 350 feet

Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 8 inches—brown sand

Subsurface layer:
8 to 23 inches—light yellowish brown sand
23 to 58 inches—reddish yellow sand

Subsoil:
58 to 80 inches—red sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat excessively drained Candor soils in landscape positions similar to those of the Troup soil
- The well drained Uchee soils on side slopes near drainageways

Dissimilar (less than 10 percent of map unit):
- The well drained Cowarts soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Rapid in the sandy horizons; moderate in the loamy subsoil
Depth to high water table: Greater than 6 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Medium
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- Installing the absorption lines on the contour helps to overcome the slope.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness and slope
Management measures and considerations:
- The droughtiness and slope limitations can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

UgB—Uchee sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 150 feet, ranging from 50 to 200 feet
Shape of areas: Irregular
Size of areas: Typically 15 to 65 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—yellowish brown sand

Subsurface layer:
3 to 25 inches—very pale brown sand

Subsoil:
25 to 47 inches—brownish yellow sandy clay loam
47 to 57 inches—mottled brownish yellow, red, and gray sandy clay loam and clay loam

Substratum:
57 to 65 inches—mottled yellow, gray, and red sandy loam

Inclusions

Similar (about 10 percent of map unit):
- The somewhat excessively drained Blanton soils in the higher landscape positions
- The well drained Bonneau and Wagram soils in landscape positions similar to those of the Uchee soil

Dissimilar (about 0 to 10 percent of map unit):
- The well drained Emporia soils on sides slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation on this sandy soil.
- The moderate seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe

Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

UgC—Uchee sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 150 feet, ranging from 50 to 200 feet
Shape of areas: Irregular
Size of areas: Typically 15 to 65 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—yellowish brown sand

Subsurface layer:
3 to 25 inches—very pale brown sand

Subsoil:
25 to 47 inches—brownish yellow sandy clay loam
47 to 57 inches—mottled brownish yellow, red, and gray sandy clay loam and clay loam

Substratum:
57 to 65 inches—mottled yellow, gray, and red sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat excessively drained Blanton soils in the higher landscape positions
- The well drained Ailey soils in landscape positions similar to those of the Uchee soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Emporia soils on side slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate

Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by using a specially designed, modified conventional system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness and slope

Management measures and considerations:
- The droughtiness and slope limitations can be reduced by selecting well adapted plants, land shaping, and providing supplemental irrigation during the growing season.

UhB—Uchee gravelly sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 150 feet, ranging from 50 to 200 feet
Shape of areas: Irregular
Size of areas: Typically 15 to 80 acres, ranging from 10 to 175 acres

Typical Profile

Surface layer:
0 to 3 inches—yellowish brown gravelly sand

Subsurface layer:
3 to 25 inches—very pale brown gravelly sand

Subsoil:
25 to 47 inches—brownish yellow sandy clay loam
47 to 57 inches—mottled brownish yellow, red, and gray sandy clay loam and clay loam

Substratum:
57 to 65 inches—mottled yellow, gray, and red sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The somewhat excessively drained Blanton soils in the higher landscape positions
- The well drained Bonneau and Wagram soils in landscape positions similar to those of the Uchee soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Emporia soils on sides slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing

Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness and moderately slow permeability
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness and small stones
Management measures and considerations:
- The limitations can be reduced by selecting well adapted plants, removing stones, and providing supplemental irrigation during the growing season.

UhC—Uchee gravelly sand, 6 to 10 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 150 feet, ranging from 50 to 200 feet
Shape of areas: Irregular
Size of areas: Typically 15 to 65 acres, ranging from 10 to 150 acres

Typical Profile

Surface layer:
0 to 3 inches—yellowish brown gravelly sand

Subsurface layer:
3 to 25 inches—very pale brown gravelly sand

Subsoil:
25 to 47 inches—brownish yellow sandy clay loam
47 to 57 inches—mottled brownish yellow, red, and gray sandy clay loam and clay loam

Substratum:
57 to 65 inches—mottled yellow, gray, and red sandy loam

Inclusions

Similar (0 to 10 percent of map unit):
- The well drained Ailey soils in landscape positions similar to those of the Uchee soil

Dissimilar (0 to 10 percent of map unit):
- The well drained Emporia soils on sides slopes near drainageways

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Depth to high water table: 3.5 to 5.0 feet
Available water capacity: Low
Slope class: Moderately sloping
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low

Use and Management

Major Uses: Woodland and pasture

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The sandy surface layer restricts the use of wheeled equipment, especially when the soil is very dry.

- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Severe
Restrictive features: Wetness, moderately slow permeability, and slope
Management measures and considerations:
- The wetness and permeability limitations can be reduced by specially designing a septic system and increasing the size of the absorption field.

Dwellings without basements
Degree of limitations: Moderate
Restrictive features: Slope
Management measures and considerations:
- The slope can be overcome by cutting and filling or by modifying the design of the building.

Lawns and landscaping
Degree of limitations: Moderate
Restrictive features: Droughtiness, slope, and small stones
Management measures and considerations:
- The limitations can be reduced by selecting well adapted plants, land shaping, removing small stones, and providing supplemental irrigation during the growing season.

Ur—Udorthents

Setting

Shape of areas: Rectangular
Size of areas: Typically 5 to 25 acres, ranging from 3 to 159 acres

Typical Profile

Udorthents consist of areas where the soil material has been deposited, disturbed, or removed to a depth of more than 2 feet. The material is a mixture of sandy, loamy, clayey, or gravelly soil that, when mixed, is dominantly loamy. It is variable in texture and color, depending on the location of the area.

Inclusions

Similar (less than 15 percent of map unit):
- Small areas of Quartzipsamments

Dissimilar (less than 10 percent of map unit):
- Small undisturbed areas of Faceville, Lucy, Orangeburg, Eunola, and Uchee soils
- Areas of water

Soil Properties and Qualities

Because the characteristics are so variable, onsite investigation is needed to determine the soil properties.

Use and Management

Major Uses: Woodland

Agricultural Development

Cropland
Suitable crops: None

Hayland and pasture
Suitable grasses: Bahiagrass
Management concerns: Slope and drainage
Management measures and considerations:
- Land shaping can help to reduce the limitations.

Woodland
Trees to plant: Loblolly pine
Management concerns: Erosion hazard, equipment limitation, and seedling mortality
Management measures and considerations:
- Land shaping is needed to reduce the erosion hazard and the equipment limitation.
- The seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.

Homesite and Urban Development

Sanitary facilities, dwellings, and lawns and landscaping
Management concerns: Slope and drainage
Management measures and considerations:
- Onsite investigation is needed to determine the suitability of a site for any proposed use.

WaB—Wagram sand, 0 to 6 percent slopes

Setting

Major Land Resource Area: Southern Coastal Plain
Slope length: Typically 100 to 300 feet, ranging from 50 to 700 feet
Shape of areas: Irregular
Size of areas: Typically 25 to 100 acres, ranging from 10 to 200 acres

Typical Profile

Surface layer:
0 to 7 inches—grayish brown sand

Subsurface layer:
7 to 30 inches—very pale brown sand

Subsoil:
30 to 54 inches—reddish yellow sandy clay loam
54 to 72 inches—strong brown sandy clay loam that has yellow and yellowish red mottles

Inclusions

Similar (less than 15 percent of map unit):
- The somewhat excessively drained Blanton soils in the higher landscape positions
- The well drained Lucy soils in landscape positions similar to those of the Wagram soil
- The well drained Bonneau and Uchee soils in the lower landscape positions
- Small areas that have brittle lower Bt horizons

Dissimilar (less than 10 percent of map unit):
- The well drained Emporia, Nankin, Noboco, and Norfolk soils in the lower landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: Greater than 6 feet
Available water capacity: Low
Slope class: Nearly level or gently sloping
Hazard of water erosion: Slight
Surface runoff: Slow
Organic matter content: Low

Use and Management

Major Uses: Cropland, woodland, and pasture

Agricultural Development

Cropland
Suitable crops: Soybeans, corn, tobacco, and wheat
Management concerns: Droughtiness, low nutrient-holding capacity, and soil blowing
Management measures and considerations:
- Conservation tillage, contour farming, contour stripcropping that uses close-growing grains or legumes, the use of cover crops, and crop residue management help to increase the available water capacity and the nutrient-holding capacity and reduce the risk of soil blowing.
- Fertilizers should be applied at intervals.

Hayland and pasture
Suitable grasses: Bermudagrass and bahiagrass
Management concerns: Droughtiness and low nutrient-holding capacity
Management measures and considerations:
- Frequent applications of fertilizer are needed.
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during dry periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Equipment limitation, seedling mortality, and plant competition
Management measures and considerations:
- The use of tracked or wide-tired vehicles helps to reduce the equipment limitation.
- The moderate seedling mortality rate, which is increased by droughtiness, can be reduced by planting seedlings in furrows.
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Restrictive features: Slight limitations

Dwellings without basements
Restrictive features: Slight limitations

Lawns and landscaping
Degree of limitations: Moderate

Restrictive features: Droughtiness
Management measures and considerations:
- The droughtiness limitation can be reduced by selecting well adapted plants and by providing supplemental irrigation during the growing season.

WkA—Wickham fine sandy loam, 0 to 2 percent slopes

Setting

Major Land Resource Areas: Atlantic Coast Flatwoods and Southern Coastal Plain
Landform: Nearly level stream terraces adjacent to the Pee Dee River flood plain and areas along stream terraces of large creeks
Slope length: Typically 100 to 250 feet, ranging from 50 to 300 feet
Shape of areas: Irregular or elongated
Size of areas: Typically 50 to 80 acres, ranging from 10 to 100 acres

Typical Profile

Surface layer:
0 to 8 inches—yellowish red fine sandy loam

Subsoil:
8 to 52 inches—red clay loam
52 to 62 inches—yellowish red fine sandy loam

Substratum:
62 to 72 inches—reddish yellow sandy loam

Inclusions

Similar (less than 10 percent of map unit):
- The well drained Emporia, Cowarts, and Nankin soils in the higher landscape positions
- The well drained Riverview soils in the lower landscape positions
- Small areas that are clayey in the lower part of the subsoil
- Small areas that have more than 10 percent gravel in the surface layer, in the lower part of the subsoil, and in the substratum

Dissimilar (less than 10 percent of map unit):
- The somewhat excessively drained Tarboro, the somewhat poorly drained Chenneby, and the poorly drained Chastain soils in the slightly lower landscape positions
- The well drained Ailey and the somewhat excessive Alaga soils in the slightly higher landscape positions

Soil Properties and Qualities

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Depth to high water table: Greater than 6 feet
Available water capacity: Moderate
Slope class: Nearly level
Hazard of water erosion: Moderate
Surface runoff: Medium
Organic matter content: Low
Flooding: Rare

Use and Management

Major Uses: Cropland and woodland

Agricultural Development

Cropland
Suitable crops: Cotton, soybeans, corn, and wheat
Management concerns:
- This soil has no major management problems affecting cropland.

Management measures and considerations:
- Returning crop residue to the soil and growing cover crops help to maintain the organic matter content and improve fertility.

Hayland and pasture
Suitable crops: Bahiagrass
Management concerns:
- This soil has no major management problems affecting hayland and pasture.

Management measures and considerations:
- Proper stocking rates, pasture rotation, timely deferment of grazing, and restricted use during wet periods help to keep the pasture in good condition.

Woodland
Trees to plant: Loblolly pine
Management concerns: Plant competition
Management measures and considerations:
- Competing vegetation can be controlled by proper site preparation, such as burning, spraying, cutting, and girdling.

Homesite and Urban Development

Septic tank absorption fields
Degree of limitations: Moderate
Restrictive features: Moderately slow permeability
Management measures and considerations:
- Increasing the size of the absorption field helps to reduce the permeability limitation.

Dwellings without basements
Degree of limitations: Severe
Restrictive features: Flooding
Management measures and considerations:
- Because of the difficulty and expense of reducing the flooding limitation, this soil generally is not used as sites for dwellings.

Lawns and landscaping
Restrictive features: Slight limitations

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Generally, the soils in Marlboro County that are well suited to crops are also well suited to urban uses. The data concerning specific soils in the county can be used in planning future land use patterns. The potential for farming should be considered relative to any soil limitations and the potential for nonfarm development.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Gene E. Hardee, conservation agronomist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils are identified, the system of land capability classification used by the Natural Resources Conservation Service is explained, the estimated yields of the main crops and hay and pasture plants are listed for each soil, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units” and in the tables. Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Federal and State regulations require that any area designated as wetlands cannot be altered without prior approval. Contact the local office of the Natural Resources Conservation Service for identification of hydric soils and potential wetlands.

In 1988, according to the Marlboro County Soil and Water Conservation District, about 113,000 acres in Marlboro County was used as pasture, hayland, or cropland. Of this total, about 95,000 acres was used for field crops, mainly cotton, soybeans, corn, wheat, and rye, and about 100 acres was used for orchards, mainly peach and pecan orchards. Since 1986, approximately 11,000 acres has been removed from crop production through participation in the Conservation Reserve Program.

The field crops that are suited to the soils and climate of Marlboro County include many that are not commonly grown. Soybeans, corn, and cotton are the principal row crops. A small acreage of cropland is used for watermelons, peanuts, and grain sorghum. Wheat and rye are the common close-growing crops. However, oats, barley, pearl millet, sudangrass, and several close-growing legumes, such as alfalfa, arrowleaf clover, and crimson clover, can be grown for forage and seed. Bicolor and sericea lespedeza are perennial grasses grown for seed, forage, and wildlife habitat. The principal grasses grown for forage are bahiagrass, bermudagrass, and tall fescue.

Specialty crops include vegetables, small fruits, peaches, and pecans. A small acreage is used for cantaloupes, field peas, lima beans, okra, squash, sweet corn, tomatoes, collards, turnips, broccoli, and strawberries. Large areas can be adapted to these and other specialty crops, such as blueberries.

Deep soils that have good natural drainage, have a moderate or high available water capacity, and warm up early in spring are especially well suited to many vegetables. Emporia, Faceville, Lucy, Marlboro, Noboco, Norfolk, Wagram, and Wickham soils are examples. Crops generally can be planted and harvested earlier on these soils than on other soils in the survey area.

The latest information about specialty crops can be obtained from the local office of the Cooperative Extension Service or the Natural Resources Conservation Service.

The suitability of the soils in Marlboro County for increased production of food is good. In 1982, according to the County Resources Inventory, approximately 120,000 acres of potentiality good cropland was used for timber or pasture. The production of food can be increased by converting this land to cropland and by extending the latest crop production technology to all cropland in the county. This soil survey can greatly facilitate the application of such technology.

Generally, the soils in the county that are well suited to crops and pasture are also suited to urban development. According to the Marlboro Soil and Water Conservation District, about 11,000 acres in Marlboro County is urban and built-up land. Urban and built-up land has increased at the rate of about 150 acres per year. This survey can be used to help make land use decisions that will influence the future role of farming in the county.

Erosion is a major concern on about 20 percent of the land in Marlboro County. It is also a hazard on about 40 percent of the pastureland and cropland. Water erosion commonly is a hazard on soils that have slopes of more than 2 percent or that have very long slopes of 1 or 2 percent. Soil blowing is a concern on clean-tilled, sandy soils. However, the main problem is damage to young plants rather than actual loss.

Loss of the surface layer through erosion reduces productivity and pollutes streams. Soil productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, such as Badin, Faceville, Hornsville, and Marlboro soils, and on soils that have a layer in or below the subsoil that limits the depth of the root zone, such as Cowarts soils which have a dense, somewhat brittle layer. Erosion also reduces productivity on deep, sandy soils, such as Ailey, Lucy, and Troup soils, largely because of loss of nutrients and fine soil particles. Erosion on farmland results in the sedimentation of streams. Controlling erosion minimizes the pollution of streams

and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

In some sloping fields, the original friable surface layer has been lost through erosion and spots that have clayey or sandy surface layers remain. Seedbed preparation and tillage are difficult on these spots. Such spots are common on the most sloping part of intensively cropped areas of Emporia, Faceville, Hornsville, Noboco, Norfolk, and Clayham soils.

Water erosion is controlled best by a combination of structural measures which remove excess water from the field and cropping and tillage systems that provide surface cover and reduce runoff. Structural measures such as diversions and terraces reduce the length of slope, and grassed waterways remove excess water from the field.

Contour tillage reduces the amount and velocity of runoff. A cropping sequence that includes sod crops in rotation and tillage that leaves protective residue on the surface reduce runoff and increase infiltration. On livestock farms, which require pasture and hay, including grasses and legumes in the cropping sequence helps to control erosion in sloping areas and provides nitrogen for the following crops.

Terraces and diversions can effectively control erosion on very deep, well drained soils that have uniform slopes, such as Emporia, Faceville, Marlboro, Nankin, Noboco, and Norfolk soils. These measures tend to concentrate water, however, and thus they are generally not suitable on less stable soils that have a sandy surface layer, such as Ailey, Alpin, Blanton, Bonneau, Candor, Foxworth, Lucy, and Wagram soils. On these soils, effective erosion-control systems generally include contour farming, contour stripcropping, and conservation tillage, which reduce the amount and velocity of runoff and do not concentrate the runoff.

Information about erosion-control measures for each kind of soil is available at the local office of the Natural Resources Conservation Service.

Damage to young plants by soil blowing is a major management concern on Ailey, Alpin, Autryville, Foxworth, Lucy, Candor, Troup, and Wagram soils. The risk of damage is especially high on extensive fields that are not protected by plant cover. Conservation tillage, strips of permanent vegetation, and strips of close-growing crops help to protect sandy soils that are subject to soil blowing.

Wetness is a major concern on about 52 percent of the soils in Marlboro County. Adequate drainage of cropland and hayland is feasible on only about 56 percent of these soils. Approximately 50 percent of the soils with drainage concerns are wetlands.

A low available water capacity is a limitation on Ailey, Alpin, Blanton, Bonneau, Candor, Foxworth, Lucy, Tarboro, Uchee, and Troup soils. This limitation can be reduced by crop residue management, proper crop selection, and irrigation. These soils are well suited to deep-rooted pasture grasses, such as bahiagrass and bermudagrass, and drought-tolerant crops, such as grain sorghum. Because of rapid leaching of nutrients from these soils, frequent and light applications of fertilizer and lime are needed for good growth.

The soils in Marlboro County are low in natural fertility. Regular applications of lime and fertilizer are needed. Most of the soils are naturally very strongly acid, strongly acid, or moderately acid. Commonly, they require regular applications of ground limestone to maintain or raise the pH sufficiently for good crop growth. The supply of available phosphorus and potash is naturally low in most of these soils. On the deep, sandy soils, split applications of fertilizer are needed because of leaching. On all of the soils, additions of lime and fertilizer should be based on the results of soil tests, on the needs of the crop, and on the expected level of yields. The Cooperative Extension Service can help to determine the amounts of fertilizer and lime to apply.

Soil tilth is an important factor in the germination of seeds and the infiltration of water into the soil. The surface layer of most soils in Marlboro County is sand or loamy

sand. Consequently, this layer is granular and porous and has weak structure. These conditions are generally ideal for good germination of seeds and infiltration of water. The surface layer of these soils, however, generally has a very low content of organic matter and retains only a small amount of moisture.

Fall tillage is generally not recommended because most of the cropland is sloping and subject to water erosion or is subject to soil blowing. For some crops, fall tillage is needed to control insects and disease. In such cases, a winter cover crop should be planted after the soil is tilled.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

A high level of management includes maintaining proper soil reaction and fertility levels as indicated by standard soil tests. The application rate of nitrogen for corn on soils that have a yield potential of 125 to 150 bushels per acre should be 140 to 160 pounds per acre. If the yield potential for corn is 100 bushels per acre or less, a rate of 100 to 120 pounds of nitrogen per acre should be used. The application of nitrogen in excess of that required for potential yields generally is not recommended. The excess nitrogen fertilizer that is not utilized by the crop is an unnecessary expense and causes a hazard of water pollution. If corn or cotton is grown after the harvest of soybeans or peanuts, nitrogen rates can be reduced by about 20 to 30 pounds per acre. Because nitrogen can be readily leached from sandy soils, applications may be needed on these soils more than once during the growing season.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops *(4)*. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include

possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber (fig. 10). Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forest land, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no

Figure 10.—Corn on Noboco loamy sand, 0 to 2 percent slopes, which is considered prime farmland.

rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures used to overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Woodland Management and Productivity

Norman Runge, forester, Natural Resources Conservation Service, helped prepare this section.

Originally, most of Marlboro County was forested. Currently, 172,181 acres, or about 55 percent of the total acreage, is forested. The county has good stands of commercial trees. Pine species grow mainly on the hills, and hardwood species are dominant on most of the bottom land along rivers and creeks.

Southern pine and upland hardwood forest types make up about 68 percent of the forest land in the county. The dominant pine species are loblolly pine, longleaf pine, slash pine, and shortleaf pine. The main upland hardwoods are oak and hickory. The remaining forest land includes bottom-land hardwood forest types, mainly oak, gum, and cypress.

The commercial value of forest in Marlboro County is substantial. Much of the existing commercial forest can be improved by removing undesirable species. Continued protection from grazing, prevention of fire, and control of diseases and insects can also improve the stands. The level of forest management has improved significantly in recent years. Uncontrolled burning, which once was common in the survey area, has been replaced by prescribed burning or other measures that protect the stands from fire. Other management measures currently in use include the selection of genetically improved seedlings for planting, natural regeneration, and fertilization.

Soil vary in their ability to produce trees. Available water capacity and depth of the rooting zone have major effects on tree growth. Elevation, aspect, and climate determine the kinds of trees that can grow on a site.

This soil survey can be used by woodland managers planning ways to increase the productivity of forest land. Some soils respond better to applications of fertilizer than others. Some are more susceptible to erosion after roads are built and timber is harvested. Some soils require special reforestation efforts. In the section “Detailed Soil Map Units,” the description of each map unit in the survey area that is suitable for timber production includes information about limitations in harvesting timber and management concerns in producing timber.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. *Slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate*

indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Windthrow hazard is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a high water table and the depth to bedrock, a fragipan, or other limiting layers. A rating of *slight* indicates that under normal conditions no trees are blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of *moderate* indicates that some trees can be blown down during periods when the soil is wet and winds are moderate or strong. A rating of *severe* indicates that many trees can be blown down during these periods.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index* and as a *productivity class*. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *productivity class* represents the yield likely to be produced by the most important trees. This number, expressed as cubic meters per hectare per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil. It generally is the most common species on the soil.

Trees to plant are those that are suitable for commercial wood production.

Recreation

The soils of the survey area are rated in table 8 according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are

unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the period of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat. The ratings in table 9 are intended to be used as a guide and are not site specific. Onsite investigation is needed for individual management plans.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that

limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine and cedar.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and

limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm, dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the high water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. Depth to a high water table, depth to bedrock, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, depth to a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, depth to bedrock, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established. Soil tests are essential to determine liming and fertilizer needs. Help in making soil tests or in deciding what soil additive, if any, should be used can be obtained from the office of the Marlboro Soil and Water Conservation District or the local office of the Cooperative Extension Service.

Sanitary Facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. The animal waste lagoons commonly used in farming operations are not considered in the ratings. They are generally deeper than the lagoons referred to in the table and rely on anaerobic bacteria to decompose waste materials.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope or bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and

flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the high water table is more than 3 feet. Soils rated *fair* have more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the high water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a high water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications

for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale, siltstone, and weathered granite saprolite, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a high water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a high water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel or stones, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives the restrictive features that affect each soil for drainage, irrigation, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir

area. Ponds that are less than about 2 acres in size are not shown on the maps because of the scale of mapping.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, mica, or salts or sodium. Depth to a high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table and permeability of the aquifer. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement, permeability, depth to a high water table or depth of standing water if the soil is subject to ponding, slope, susceptibility to flooding, subsidence of organic layers, and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Drainage may be a major management consideration in some areas. Management of drainage in conformance with regulations concerning wetlands may require special permits and extra planning. The local office of the Natural Resources Conservation Service should be contacted for identification of hydric soils and potential wetlands.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to a high water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the availability of suitable irrigation water, the depth of the root zone, and soil reaction.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of soil blowing, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages, by weight, of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, by volume, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil

that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence the shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time. It is the difference between the amount of soil water at field moisture capacity and the amount at wilting point.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; *high*, more than 6 percent; and *very high*, more than 9 percent.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.64. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to soil blowing. The soils assigned to group 1 are the most susceptible to soil blowing, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to soil blowing because of coarse fragments on the surface or because of surface wetness.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 15, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep or very deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep to very deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to two hydrologic groups in table 16, the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflowing streams, by runoff from adjacent slopes, or by inflow from high tides. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in swamps and marshes or in a closed depression is considered ponding.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely to occur.

Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as none, rare, occasional, or frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average,

more than once in 2 years (the chance of flooding is more than 50 percent in any year). *Common* is used when occasional and frequent classes are grouped for certain purposes. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 days to 1 month, and *very long* if more than 1 month. Probable dates are expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered is local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. Indicated in table 16 are the depth to the high water table; the kind of water table—that is, *perched* or *apparent*; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Two numbers in the column showing depth to the high water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. “More than 6.0” indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Table 16 shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors. Not shown in the table is subsidence caused by an imposed surface load or by the withdrawal of ground water throughout an extensive area as a result of lowering the water table.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and the amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(5)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 17 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Fluvaquents (*Fluv*, meaning flood plain, plus *aquent*, the suborder of the Entisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Fluvaquents.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, acid, thermic Typic Fluvaquents.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each

series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The location of the typical pedon is also described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” *(7)*. Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” *(5)* and in “Keys to Soil Taxonomy” *(8)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section “Detailed Soil Map Units.”

Ailey Series

The Ailey series consists of very deep, well drained, slowly permeable soils that formed in loamy marine sediments. These soils are on nearly level to moderately steep uplands in the Carolina and Georgia Sand Hills Major Land Resource Area. Slopes range from 0 to 25 percent. The soils are classified as loamy, siliceous, thermic Arenic Kanhapludults.

Ailey soils are geographically associated with Alpin, Badin, Candor, Cowarts, Pelion, Troup, and Uchee soils. Alpin soils do not have an argillic horizon. Badin soils formed in residuum weathered from slates. Candor soils are bisequal Paleudults. Cowarts soils are not arenic. Pelion soils do not have a sandy epipedon that is more than 20 inches thick. Troup soils have a sandy surface layer that is more than 40 inches thick. Uchee soils do not have Btx horizons.

Typical pedon of Ailey sand, moderately wet, 0 to 6 percent slopes; 3.9 miles north of Bennettsville on Hickory Grove Road from its intersection with S.C. Highway 9, about 1.5 miles north on Aaron Temple Church Road, 100 feet east of the road:

Ap—0 to 7 inches; grayish brown (10YR 5/2) sand; weak fine subangular blocky structure; very friable; common fine and medium roots; few fine pores; moderately acid; abrupt wavy boundary.

E—7 to 23 inches; light yellowish brown (10YR 6/4) sand; single grained; friable; few fine, medium, and coarse roots; few pockets of stripped sand grains; strongly acid; clear wavy boundary.

Bt—23 to 40 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few medium and coarse roots; few fine and medium pores; few fragments of charcoal; strongly acid; gradual wavy boundary.

Btx—40 to 46 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; few medium and coarse roots; 20 percent of matrix is brittle; few coarse clean sand grains; common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; few fine faint light gray (10YR 7/1) iron depletions; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

BC—46 to 56 inches; 35 percent light gray (10YR 6/1), 35 percent brownish yellow (10YR 6/8), and 30 percent red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; firm; common prominent clay films on faces of peds; few fine flakes of mica; red part is brittle; very strongly acid; gradual wavy boundary.

C—56 to 65 inches; 25 percent light gray (10YR 7/1), 35 percent red (10R 4/8), and 30 percent yellow (10YR 7/8) sandy clay loam; massive; friable; common clean sand grains; very strongly acid.

The thickness of the solum ranges from 42 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. It is sand.

The Bt horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8. It is sandy loam or sandy clay loam.

The Btx horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. Brittle and hard bodies make up 20 to 40 percent of the horizon, by volume. The horizon is sandy clay loam.

The BC horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam or sandy clay loam.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is coarse sandy loam, sandy loam, or sandy clay loam.

Alaga Series

The Alaga series consists of very deep, somewhat excessively drained soils that formed in sandy fluvial and marine sediments. These soils are on stream terraces in the Atlantic Coast Flatwoods Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as thermic, coated Typic Quartzipsamments.

Alaga soils are geographically associated with Blanton, Clayham, Foxworth, Tarboro, and Wickham soils. Blanton, Clayham, and Wickham soils have argillic horizons. Foxworth soils have iron depletions within a depth of 6 feet. Tarboro soils are Udipsamments and have mixed mineralogy.

Typical pedon of Alaga sand, 0 to 6 percent slopes; 1.6 miles north on U.S. Highway 1 from its intersection with S.C. Highway 9 in Wallace, 150 feet west of the road:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; few fine roots; moderately acid; clear wavy boundary.

C1—9 to 55 inches; strong brown (7.5YR 5/6) loamy sand; weak fine granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.

C2—55 to 80 inches; brownish yellow (10YR 6/6) sand; single grained; loose; very strongly acid.

The thickness of the sandy horizons is more than 80 inches. The silt plus clay content in the 10- to 40-inch control section ranges from 10 to 25 percent, and the clay content ranges from 2 to 12 percent. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 2 or 3. It is sand.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 8, and chroma of 3 to 8. It is fine sand, loamy sand, or loamy fine sand.

Alpin Series

The Alpin series consists of very deep, excessively drained soils that formed in sandy marine and aeolian sediments. These soils are on nearly level to moderately sloping uplands in the Carolina and Georgia Sand Hills Major Land Resource Area. Slopes range from 0 to 15 percent. The soils are classified as thermic, coated Typic Quartzipsamments.

Alpin soils are geographically associated with Ailey, Cowarts, Candor, Troup, and Pamlico soils. Ailey, Cowarts, Candor, and Troup soils have argillic horizons. Pamlico soils are very poorly drained Histosols.

Typical pedon of Alpin sand, 0 to 6 percent slopes; 5.4 miles north on S.C. Highway 177 from its junction with S.C. Highway 9 in Wallace, 0.2 mile east on Pleasant Hill Road, 0.2 mile north on Short Road, 1.2 miles north on an unpaved road, 30 feet east of the road:

A—0 to 6 inches; brown (10YR 5/3) sand; single grained; loose; common fine and medium and few coarse roots; strongly acid; abrupt wavy boundary.

E1—6 to 25 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few fine and medium and few coarse roots; strongly acid; gradual wavy boundary.

E2—25 to 40 inches; strong brown (7.5YR 5/6) sand; single grained; loose; few fine and medium and few coarse roots; strongly acid; gradual wavy boundary.

E3—40 to 48 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few fine roots; common uncoated sand grains; very strongly acid; gradual wavy boundary.

E&Bt1—48 to 68 inches; yellow (10YR 7/6) sand; single grained; loose; common brown (7.5YR 5/6) lamellae that are about 2 centimeters thick; few streaks of white (10YR 8/1) sand; very strongly acid; gradual wavy boundary.

E&Bt2—68 to 80 inches; very pale brown (10YR 7/4) sand; single grained; loose; common (7.5YR 5/6) lamellae that are about 3 centimeters thick; common streaks of white (10YR 8/1) sand; very strongly acid.

The thickness of the solum is 65 inches or more. The depth to lamellae ranges from 40 to 78 inches. The cumulative thickness of the lamellae within a depth of 80 inches ranges from 0.5 inch to 6.0 inches. Reaction ranges from very strongly acid to slightly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 4 to 8. It is sand.

The E horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 1 to 3. It is sand.

The E part of the E and Bt horizon has hue of 7.5YR or 10YR, value of 7 or 8, and chroma of 1 to 6. It is sand.

The Bt part (lamellae) of the E and Bt horizon has hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8. It is loamy sand.

Autryville Series

The Autryville series consists of very deep, well drained, moderately rapidly permeable and moderately permeable soils that formed in loamy marine sediments. These soils are on broad uplands in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are classified as loamy, siliceous, thermic Arenic Paleudults.

Autryville soils are geographically associated with Blanton, Bonneau, Candor, Noboco, Ocilla, and Rains soils. Blanton soils have a surface layer that is more than 40 inches thick. Candor soils do not have loamy Bt horizons between depths of 20 and 40 inches. Ocilla and Bonneau soils are not bisequal. Rains soils have gray horizons directly below the A horizon. Noboco soils do not have surface horizons that are 20 to 40 inches thick.

Typical pedon of Autryville sand, 0 to 6 percent slopes; 2.5 miles southwest on Hunts Bluff Road from its junction with S.C. Highway 38 in Blenheim, 1.3 miles north on Salem Road, 200 feet east of the road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; few fine roots; slightly acid; clear wavy boundary.

E—6 to 25 inches; brownish yellow (10YR 6/6) sand; weak fine granular structure; very friable; few fine roots; strongly acid; clear wavy boundary.
Bt—25 to 37 inches; brownish yellow (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; gradual wavy boundary.
E´—37 to 50 inches; brownish yellow (10YR 6/6) sand; single grained; loose; few fine distinct reddish yellow (7.5YR 6/8) and few fine faint pale brown (10YR 6/3) masses of iron accumulation; strongly acid; clear wavy boundary.
B´t—50 to 65 inches; light yellowish brown (10YR 6/4) sandy clay loam; moderate medium subangular blocky structure; friable; common fine and medium pores; common medium distinct reddish yellow (7.5YR 6/8) and few medium distinct yellowish red (5YR 5/8) masses of iron accumulation; common medium distinct light gray (10YR 6/1) iron depletions; very few distinct clay films on faces of peds; strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 3. It is sand.

The E horizon has hue of 10YR, value of 4 to 7, and chroma of 3 to 8. It is sand, fine sand, or loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or sandy clay loam.

The E´ horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 8. It is sand, loamy sand, or loamy fine sand.

The B´t horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 1 to 8. In most pedons it has masses of iron accumulation and iron depletions in shades of yellow, red, or gray. It is sandy loam, fine sandy loam, or sandy clay loam.

Badin Series

The Badin series consists of moderately deep, well drained, moderately permeable soils that formed in residuum weathered from slates. These soils are on side slopes leading to drainageways in the Southern Piedmont Major Land Resource Area. Slopes range from 2 to 40 percent. The soils are classified as clayey, mixed, thermic Typic Hapludults.

Badin soils are geographically associated with Ailey, Chewacla, and Cowarts soils. Ailey and Cowarts soils formed in coastal plain sediments. Chewacla soils are on flood plains.

Typical pedon of Badin silt loam, 15 to 40 percent slopes; 6.2 miles northwest on U.S. Highway 1 from its junction with S.C. Highway 9 in Wallace, 0.7 mile west on Pegues Drive Road, 0.3 mile on Pegues Circle Road, 1.7 miles on an unpaved road, 200 feet north in a wooded area:

A—0 to 6 inches; brown (7.5YR 5/4) silt loam; weak fine subangular blocky structure; friable; many fine and medium roots; few clean sand grains; few slate and quartz pebbles; very strongly acid; clear wavy boundary.
Bt—6 to 29 inches; red (2.5YR 4/8) clay; weak medium subangular blocky structure; friable; few fine, medium, and coarse roots; many distinct clay films on faces of peds; strongly acid; gradual wavy boundary.
Bt/C—29 to 31 inches; red (2.5YR 4/8) clay (Bt part) and red (10R 5/6) and yellow (10YR 7/8) silt loam (C part); weak fine subangular blocky structure in Bt part, massive in C part; few fine roots along fracture planes in C part; strongly acid; gradual wavy boundary.

Cr—31 to 60 inches; red (10R 5/6) and yellow (10YR 5/6) fractured slate that crushes to silt loam; strongly acid.

The thickness of the solum ranges from 20 to 40 inches. The depth to weathered bedrock ranges from 20 to 40 inches. The depth to hard bedrock is 40 inches or more. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 8. It is loam or silt loam.

The Bt horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8. It is silty clay or clay.

The Bt/C horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8. It is clay loam, silt loam, or silty clay loam.

The Cr horizon is multicolored slate that is fractured and weathered. It can be dug with difficulty with a spade.

Blanton Series

The Blanton series consists of very deep, somewhat excessively drained, moderately permeable soils that formed in loamy marine sediments. These soils are on broad ridgetops, around the rims of depressions, and on side slopes in the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 10 percent. The soils are classified as loamy, siliceous, thermic Grossarenic Paleudults.

Blanton soils are geographically associated with Ailey, Autryville, Bonneau, Candor, Coxville, Emporia, Foxworth, Noboco, Ocilla, Rains, Uchee, and Troup soils. Ailey, Bonneau, Autryville, Candor, Ocilla, and Uchee soils have arenic epipedons. Coxville and Rains soils have gray horizons directly below the surface layer. Foxworth soils do not have argillic horizons. Troup soils have Bt horizons that have hue of 5YR or redder. Noboco and Emporia soils do not have grossarenic epipedons.

Typical pedon of Blanton sand, 0 to 6 percent slopes; 0.5 mile northwest on Gravel Pit Road from its junction with Hunts Bluff Road in Blenheim, 200 feet north of the road:

A—0 to 8 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; loose; common fine roots; strongly acid; clear wavy boundary.

E1—8 to 42 inches; yellowish brown (10YR 5/6) sand; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

E2—42 to 65 inches; yellow (10YR 7/8) sand; single grained; loose; few fine roots; few fine distinct yellowish red (5YR 5/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

E3—65 to 70 inches; very pale brown (10YR 7/4) sand; single grained; loose; strongly acid; gradual wavy boundary.

Bt—70 to 74 inches; yellowish brown (10YR 5/4) sandy clay loam; weak fine subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/8) and few medium distinct dark brown (10YR 4/3) masses of iron accumulation; common medium distinct light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual wavy boundary.

Btg—74 to 80 inches; gray (10YR 6/1) sandy clay loam; weak fine subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/6) and dark brown (10YR 4/3) masses of iron accumulation; few distinct clay films on faces of peds; strongly acid.

The thickness of the solum is more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is sand.

The E horizon has hue of 7.5YR or 10YR, value of 5 to 8, and chroma of 1 to 8. It is sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8. In some pedons it has masses of iron accumulation and iron depletions in shades of gray, red, or brown. It is sandy loam or sandy clay loam.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 1 or 2. It is sandy loam, sandy clay loam, or sandy clay.

Bonneau Series

The Bonneau series consists of very deep, well drained, moderately permeable soils that formed in loamy marine sediments. These soils are on nearly level or gently sloping low ridges and side slopes in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 4 percent. The soils are classified as loamy, siliceous, thermic Arenic Paleudults.

Bonneau soils are geographically associated with Ailey, Autryville, Blanton, Candor, Coxville, Emporia, Lucy, Norfolk, Noboco, Ocilla, Rains, Uchee, and Wagram soils. Ailey and Uchee soils are Hapludults. Autryville soils are bisequal. Blanton soils are grossarenic. Candor soils have sandy Bt horizons. Coxville and Rains soils have gray horizons directly below the surface layer. Lucy soils have Bt horizons that have hue of 5YR or redder. Wagram soils have a kandic horizon. Norfolk, Noboco, and Emporia soils do not have arenic epipedons. Ocilla soils have iron depletions within a depth of 30 inches.

Typical pedon of Bonneau sand, 0 to 4 percent slopes; 0.8 mile south on Beauty Spot Road from its junction with S.C. Highway 38 in Bennettsville, 0.2 mile north on a farm road, 100 feet northwest of the road:

Ap—0 to 6 inches; brown (10YR 5/3) sand; weak fine granular structure; friable; common fine and medium roots; neutral; clear wavy boundary.

E—6 to 24 inches; pale brown (10YR 6/3) sand; very friable; few fine roots; strongly acid; clear wavy boundary.

Bt1—24 to 37 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; 1 percent fine gravel; strongly acid; gradual wavy boundary.

Bt2—37 to 51 inches; brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine pores; few medium distinct yellowish red (5YR 5/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; few distinct clay films on faces of peds; 1 percent fine and medium gravel; strongly acid; gradual wavy boundary.

Bt3—51 to 65 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine pores; 3 percent plinthite nodules; common reddish yellow (7.5YR 8/6) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; few medium distinct gray (10YR 6/1) iron depletions; few distinct clay films on faces of peds; 1 percent fine gravel; strongly acid; gradual wavy boundary.

Bt4—65 to 70 inches; 33 percent red (2.5YR 4/8), 35 percent brownish yellow (10YR 6/6), and 32 percent gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; many clean sand grains; few distinct clay films on faces of peds; strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 4. It is sand.

The E horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 6. It is sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8. It is sandy loam or sandy clay loam.

The lower part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 3 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. Iron depletions occur within a depth of 60 inches. The horizon is sandy loam, sandy clay loam, or sandy clay.

Byars Series

The Byars series consists of very deep, very poorly drained, slowly permeable soils that formed in clayey marine sediments. These soils are on broad flats and along drainageways in the Atlantic Coast Flatwoods and the Southern Coastal Plain Major Land Resource Areas. Slopes are less than 1 percent. The soils are classified as clayey, kaolinitic, thermic Umbric Paleaquults.

Byars soils are geographically associated with Coxville, Johnston, and Smithboro soils. Coxville and Smithboro soils do not have an umbric epipedon. Johnston soils are loamy.

Typical pedon of Byars loam; 0.4 mile south on S.C. Highway 38 from its intersection with S.C. Highway 34 in Brownsville, 0.5 mile west on an unpaved road, 0.9 mile south on Berry Road to a logging road, 1,200 feet west on the logging road, 30 feet north of the road:

A—0 to 19 inches; black (10YR 2/1) loam; weak medium subangular blocky structure; friable; many coarse, medium, and fine roots; many fine and very fine pores; few fine worm holes; extremely acid; gradual wavy boundary.

Btg1—19 to 23 inches; dark gray (10YR 4/1) clay loam; moderate medium subangular blocky structure; friable; many very fine, fine, and medium roots; many fine pores; few distinct clay films on faces of peds; extremely acid; clear wavy boundary.

Btg2—23 to 32 inches; gray (10YR 6/1) clay; strong medium subangular blocky structure; firm; few fine pores; common medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation; few coarse light gray (10YR 7/1) iron depletions; few very fine flakes of mica; many distinct clay films on faces of peds and along old root channels; extremely acid; gradual wavy boundary.

Btg3—32 to 48 inches; light gray (10YR 7/2) silty clay; moderate medium subangular blocky structure; firm; common medium distinct reddish yellow (7.5YR 7/8) and few fine prominent reddish yellow (5YR 6/8) masses of iron accumulation; few very fine flakes of mica; many distinct clay films on faces of peds; extremely acid; gradual wavy boundary.

Btg4—48 to 60 inches; light gray (10YR 7/1) clay; weak medium subangular blocky structure; firm; many distinct continuous clay films on faces of peds; extremely acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1. It is loam.

The Btg horizon has hue of 10YR or is neutral in hue, has value of 2 to 7, and has chroma of 0 to 2. It is clay loam, sandy clay, silty clay, or clay.

Candor Series

The Candor series consists of very deep, somewhat excessively drained soils that are rapidly permeable in the upper horizons and moderately permeable or moderately slowly permeable in the lower horizons. These soils formed in sandy and loamy marine sediments. They are on nearly level to moderately steep uplands in the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 15 percent. The soils are classified as sandy, siliceous, thermic Arenic Paleudults.

Candor soils are geographically associated with Ailey, Alpin, Blanton, Bonneau, Cowarts, Lucy, Troup, Uchee, and Wagram soils. Alpin soils do not have an argillic horizon. Blanton and Troup soils have a sandy surface layer that is more than 40 inches thick. Ailey, Bonneau, Lucy, Uchee, and Wagram soils have loamy Bt horizons between depths of 20 and 40 inches. Cowarts soils do not have an arenic epipedon.

Typical pedon of Candor sand, 0 to 6 percent slopes; 1.9 miles east on Old Wire Road from its junction with S.C. Highway 38 north of Bennettsville, 500 feet south on an unpaved road, 100 feet east of the road:

A—0 to 8 inches; brown (10YR 5/3) sand; weak fine subangular blocky structure; friable; few fine and medium roots; moderately acid; abrupt wavy boundary.

E—8 to 26 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine and medium roots; strongly acid; clear wavy boundary.

Bt—26 to 38 inches; brown (10YR 5/8) loamy sand; weak fine subangular blocky structure; friable; few fine and medium roots; strongly acid; gradual wavy boundary.

E´—38 to 58 inches; brownish yellow (10YR 6/8) sand; single grained; loose; few medium ironstone nodules; very strongly acid; gradual wavy boundary.

B´t1—58 to 62 inches; brownish yellow (10YR 6/6) sandy loam; weak fine subangular blocky structure; friable; few fine pores; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

B´t2—62 to 70 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few distinct clay films on faces of peds; strongly acid.

The thickness of the solum is more than 80 inches. Reaction ranges from extremely acid to strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. It is sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It is loamy sand.

The E´ horizon has hue of 7.5YR or 10YR, value of 5 to 8, and chroma of 3 to 8. It is sand.

The B´t horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8. In some pedons it has masses of iron accumulation and iron depletions in shades brown, red, or gray. It is sandy loam, fine sandy loam, or sandy clay loam.

Chastain Series

The Chastain series consists of very deep, poorly drained, slowly permeable soils that formed in clayey fluvial sediments. These soils are on nearly level flood plains that drain the Southern Piedmont and Southern Coastal Plain Major Land Resource Areas.

Slopes are less than 1 percent. The soils are classified as fine, mixed, acid, thermic Typic Fluvaquents.

Chastain soils are geographically associated with Chenneby, Coxville, Smithboro, Riverview, Tarboro, and Wickham soils. Coxville, Smithboro, and Wickham soils have argillic horizons. Tarboro soils are sandy throughout. Chenneby and Riverview soils do not have dominant chroma of 2 or less directly below the A or Ap horizon.

Typical pedon of Chastain loam, 0 to 2 percent slopes, in an area of Chastain-Chenneby complex, frequently flooded; 4.2 miles southwest on U.S. Highway 15 & 401 from its intersection with Main Street in Bennettsville, 1.5 miles south on Edwards Road, 0.4 mile southwest on a farm road, 1,300 feet northwest on a logging road, 2,000 feet west on the logging road, 20 feet north of the road:

A1—0 to 5 inches; dark grayish brown (10YR 4/2) loam; weak fine subangular blocky structure; friable; common fine and medium and few coarse roots; common fine pores; common medium faint light yellowish brown (10YR 6/4) masses of iron accumulation; few fine flakes of mica; many fine clean sand grains; extremely acid; clear wavy boundary.

A2—5 to 12 inches; dark gray (10YR 4/1) loam; weak medium subangular blocky structure; firm; common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; common fine flakes of mica; extremely acid; gradual wavy boundary.

Bg1—12 to 26 inches; gray (10YR 5/1) clay; moderate medium prismatic structure; firm; common fine and medium roots; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; few fine flakes of mica; extremely acid; gradual wavy boundary.

Bg2—26 to 54 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; few fine roots; common coarse distinct brownish yellow (10YR 6/6) and few medium distinct strong brown (7.5YR 6/8) masses of iron accumulation; common fine flakes of mica; extremely acid; gradual wavy boundary.

2Cg—54 to 75 inches; gray (10YR 6/1) loamy sand; massive; very friable; few fine roots; common fine distinct brownish yellow (10YR 6/6) and reddish yellow (7.5YR 6/8) masses of iron accumulation; extremely acid.

The thickness of the solum ranges from 40 to more than 72 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 0 to 2. It is loam.

The Bg horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 4 to 7, and has chroma of 0 to 2. In some pedons it has masses of iron accumulation in shades of yellow, red, or brown. It is silty clay loam, clay loam, silty clay, or clay.

The C or 2C horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 4 to 7, and has chroma of 0 to 2. In most pedons it has masses of iron accumulation in shades of red, brown, or yellow. It is sand, loamy sand, or fine sand.

Chenneby Series

The Chenneby series consists of very deep, somewhat poorly drained, moderately permeable soils that formed in loamy fluvial sediments. These soils are on nearly level flood plains in the Southern Piedmont and Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are classified as fine-silty, mixed, thermic Fluvaquentic Dystrochepts.

Chenneby soils are geographically associated with Chastain, Chewacla, Hornsville, Smithboro, Riverview, Tarboro, and Wickham soils. Chastain soils have dominant

chroma of 2 or less directly below the A or Ap horizon. Chewacla soils have less than 20 percent silt in the control section. Hornsville, Smithboro, and Wickham soils have argillic horizons. Tarboro soils are sandy throughout. Riverview soils do not have mottles that have chroma of 2 within a depth of 24 inches.

Typical pedon of Chenneby silt loam, 0 to 2 percent slopes, in an area of Chastain-Chenneby complex, frequently flooded; 8.3 miles west on U.S. Highway 15 & 401 from the junction of U.S. Highway 15 & 401 Bypass in Bennettsville, 0.3 mile northwest on an unpaved road, 200 feet west in a wooded area:

A—0 to 2 inches; dark brown (10YR 4/3) silt loam; weak fine granular structure; friable; common fine and medium and few coarse roots; very strongly acid; abrupt wavy boundary.

Bw1—2 to 12 inches; yellowish brown (10YR 5/6) silt loam; weak fine subangular blocky structure; friable; common fine and medium roots; few fine pores; few fine distinct light brownish gray (2.5Y 6/2) iron depletions; few fine flakes of mica; common fine and medium concretions of iron and manganese; very strongly acid; gradual wavy boundary.

Bw2—12 to 21 inches; light yellowish brown (2.5Y 6/4) silt loam; weak medium subangular blocky structure; friable; few fine and medium roots; common fine pores; common medium distinct olive yellow (2.5Y 6/6) masses of iron accumulation and common medium distinct light brownish gray (2.5Y 6/2) iron depletions; few fine flakes of mica; common fine and medium concretions of iron and manganese; strongly acid; gradual wavy boundary.

Bg1—21 to 39 inches; light brownish gray (2.5Y 6/2) silty clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; few fine and medium pores; common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; few fine flakes of mica; common fine concretions of iron and manganese; very strongly acid; gradual wavy boundary.

Bg2—39 to 54 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; common medium prominent reddish yellow (7.5YR 6/8) and common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; few fine flakes of mica; common fine concretions of iron and manganese; very strongly acid; gradual wavy boundary.

BCg—54 to 72 inches; brownish gray (2.5Y 6/2) silt loam; massive and moderate medium subangular blocky structure; friable; common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation; common fine concretions of iron and manganese; moderately acid.

The thickness of the solum ranges from 40 to more than 70 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed. Some pedons have few or common concretions.

The A or Ap horizon has hue of 7.5YR to 10YR, value of 3 to 5, and chroma of 2 to 4. It is silt loam.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. Iron depletions occur within a depth of 24 inches. The horizon is silt loam or silty clay loam.

The Bg horizon has hue of 10YR, value of 4 to 7, and chroma of 0 to 2. In some pedons it has masses of iron accumulation in shades of yellow, brown, or red.

The BCg horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 0 to 3. In some pedons it has masses of iron accumulation and iron depletions in shades of red, yellow, or brown. It is loam, silt loam, or silty clay loam.

Chewacla Series

The Chewacla series consists of very deep, somewhat poorly drained, moderately permeable soils that formed in loamy fluvial sediments. These soils are on nearly level flood plains in the Southern Piedmont, the Southern Coastal Plain, and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, mixed, thermic Fluvaquentic Dystrochepts.

Chewacla soils are geographically associated with Badin, Chastain, Chenneby, Hornsville, Smithboro, Riverview, Tarboro, and Wickham soils. Badin soils formed in residuum weathered from slates. Chastain soils have dominant chroma of 2 or less directly below the A or Ap horizon. Chenneby soils have more that 30 percent silt in the control section. Hornsville, Smithboro, and Wickham soils have argillic horizons. Tarboro soils are sandy throughout. Riverview soils do not have iron depletions within a depth of 24 inches.

Typical pedon of Chewacla loam, 0 to 2 percent slopes, frequently flooded; 4.6 miles west and north of Mangum on Secondary Road 1148 to Gate Leak Island Road in Richmond County, North Carolina, 1.8 miles south to Duck Pond Road, 0.4 mile southeast on Duck Pond Road, 500 feet northeast of the duck pond:

Ap—0 to 8 inches; yellowish brown (10YR 5/4 loam; weak medium granular structure; very friable; many fine and medium roots; few fine flakes of mica; strongly acid; abrupt smooth boundary.

Bw1—8 to 20 inches; brown (10YR 5/3) loam; weak fine subangular blocky structure; very friable; many fine roots; common medium prominent pale yellow (5YR 7/3) and few fine prominent reddish yellow (7.5YR 6/8) masses of iron accumulation; few fine flakes of mica; few black and brown concretions of manganese; very strongly acid; clear wavy boundary.

Bw2—20 to 34 inches; 35 percent yellowish brown (10YR 5/8), 35 percent dark brown (7.5YR 3/4), and 30 percent light gray (2.5Y 7/2) loam; weak medium subangular blocky structure; friable; few fine roots; few fine flakes of mica; few fine black and dark brown concretions of manganese; very strongly acid; gradual wavy boundary.

Bw3—34 to 43 inches; 35 percent strong brown (7.5YR 5/8), 35 percent very pale brown (10YR 7/3), and 30 percent light gray (2.5Y 7/2) clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine flakes of mica; few fine dark brown concretions of manganese; very strongly acid; gradual boundary.

Bg—43 to 66 inches; light brownish gray (2.5Y 6/2) clay loam; weak medium subangular blocky structure; friable; few fine roots; common medium prominent strong brown (7.5YR 5/8) and common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation; few fine flakes of mica; strongly acid.

The thickness of the solum ranges from 15 to more than 70 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 1 to 4. It is loam.

The Bw horizon has hue of 5YR or 2.5Y, value of 4 to 7, and chroma of 3 to 8. In most pedons it has masses of iron accumulation and iron depletions in shades of red, yellow, or brown. Iron depletions range from none to common. The horizon is sandy loam, fine sandy loam, silt loam, or silty clay loam.

The Bg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 to 4. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is fine sandy loam, sandy loam, loam, silt loam, sandy clay loam, clay loam, or silty clay loam.

Clayham Series

The Clayham series consists of very deep, well drained, moderately slowly permeable soils that formed on stream terraces adjacent to the Pee Dee River flood plain and along stream terraces of large creeks in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. These soils formed in clayey fluvial and marine sediments. Slopes range from 0 to 6 percent. The soils are classified as clayey, kaolinitic, thermic Ultic Hapludalfs.

Clayham soils are geographically associated with Chastain, Chenneby, Hornsville, Riverview, Smithboro, Tarboro, and Wickham soils. Hornsville soils are clayey. Chenneby, Chastain, and Smithboro soils have iron depletions within the upper 24 inches of the B horizon. Riverview soils do not have argillic horizons. Tarboro soils are sandy throughout. Wickham soils have a fine-loamy particle-size control section.

Typical pedon of Clayham loam, 2 to 6 percent slopes; 2.8 miles west on S.C. Highway 34 from its junction with S.C. Highway 38 in Brownsville, 1.9 miles south on Rogers Lake Lane, 0.2 mile east of the road:

Ap—0 to 4 inches; reddish brown (5YR 5/4) loam; moderate medium granular structure; very friable; common fine and medium roots; few fine flakes of mica; very strongly acid; clear wavy boundary.

Bt1—4 to 29 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm; few fine and medium roots; many prominent clay films on faces of peds; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Bt2—29 to 46 inches; red (2.5YR 4/6) clay loam; weak medium subangular blocky structure; friable; many medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; common fine flakes of mica; common prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

BC1—46 to 59 inches; yellow (10YR 7/6) sandy clay loam; massive; friable; many medium prominent red (2.5YR 4/6) masses of iron accumulation; common fine flakes of mica; strongly acid; gradual wavy boundary.

BC2—59 to 65 inches; yellow (10YR 7/8) loam; massive; friable; common medium prominent red (2.5YR 5/6) masses of iron accumulation; many fine flakes of mica; strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. The silt content averages more than 30 percent in the control section. Few to many flakes of mica occur throughout the profile. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 2 to 8. It typically is sandy loam or loam. In eroded areas the Ap horizon is clay loam.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of brown or yellow in the lower part. It is clay loam, silty clay loam, silty clay, or clay.

The BC horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of red or yellow. It is sandy loam, sandy clay loam, loam, clay loam, or silty clay loam.

Cowarts Series

The Cowarts series consists of moderately deep, well drained and moderately well drained, slowly permeable soils that formed in loamy marine sediments. These soils are in nearly level to moderately steep areas of the Carolina and Georgia Sand Hills

Major Land Resource Area. Slopes range from 6 to 25 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Kanhapludults.

Cowarts soils are geographically associated with Ailey, Alpin, Badin, Candor, Pelion, Troup, and Uchee soils. Ailey, Uchee, and Candor soils are arenic. Alpin soils do not have an argillic horizon. Badin soils formed in residuum weathered from slates. Troup soils are grossarenic. Pelion soils have iron depletions indicative of wetness in the upper 24 inches of the argillic horizon.

Typical pedon of Cowarts gravelly loamy sand, 15 to 25 percent slopes; 6.2 miles north on U.S. Highway 1 from its junction with S.C. Highway 9 in Wallace, 1.7 miles east on Kimrey Road, 1.1 miles on Gun O Field Road, 1.5 miles east on an unpaved road, 20 feet north of the road:

A—0 to 5 inches; very dark gray (10YR 3/1) gravelly loamy sand; weak fine granular structure; friable; few fine and medium roots; extremely acid; clear wavy boundary.

E—5 to 9 inches; brownish yellow (10YR 6/6) gravelly loamy sand; weak fine granular structure; very friable; common fine and medium roots; extremely acid; gradual wavy boundary.

Bt1—9 to 12 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; few fine pores; few distinct clay films; 1 fine percent quartz gravel; very strongly acid; gradual wavy boundary.

Bt2—12 to 22 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; brittle, dense, and slightly cemented; few fine pores; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; few distinct clay films along root channels; 2 percent fine quartz gravel; very strongly acid; clear wavy boundary.

C1—22 to 45 inches; yellowish red (5YR 5/8) coarse sandy loam; massive; brittle, dense, and slightly cemented; common medium distinct red (2.5YR 4/8) and yellow (10YR 7/8) masses of iron accumulation; many fine white balls of kaolin; 5 percent fine quartz gravel; very strongly acid; gradual wavy boundary.

C2—45 to 58 inches; yellowish red (5YR 6/6) sandy loam; massive; friable; brittle, dense, and slightly cemented; few medium distinct white (10YR 8/1) balls of kaolin; few medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

C3—58 to 72 inches; red (2.5YR 4/8) coarse sandy loam; massive; slightly cemented; many fine prominent white (10YR 8/1) streaks of kaolin; very strongly acid.

The thickness of the solum ranges from 20 to 40 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is loamy sand or gravelly loamy sand.

The E horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It is loamy sand or gravelly loamy sand.

The upper part of the Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8. It is sandy loam, fine sandy loam, or sandy clay loam.

The lower part of the Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of yellow or brown. In some pedons it has few to many balls of kaolin. It is sandy clay loam, clay loam, or sandy clay.

The C horizon has hue of 10R to 10YR, value of 4 to 8, and chroma of 1 to 8. In some pedons it has few to many balls of kaolin. It is sandy loam, sandy clay loam, or clay loam.

Coxville Series

The Coxville series consists of very deep, poorly drained, moderately slowly permeable soils that formed in clayey marine sediments. These soils are on broad nearly level flats, in oval depressions, and in shallow drainageways in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes are less than 1 percent. The soils are classified as clayey, kaolinitic, thermic Typic Paleaquults.

Coxville soils are geographically associated with Faceville, Goldsboro, Lynchburg, Marlboro, McColl, Noboco, Norfolk, Ocilla, Ogeechee, Persanti, Rains, and Smithboro soils. Rains and Ogeechee soils are fine-loamy. Faceville, Goldsboro, Lynchburg, Marlboro, Noboco, Norfolk, Ocilla, Persanti, and Smithboro soils do not have a dominant matrix chroma of 2 or less directly below the A or Ap horizon. McColl soils have a dense and brittle layer.

Typical pedon of Coxville loam; 1.7 miles south on S.C. Highway 38 from its intersection with U.S. Highway 15 & 401 in Bennettsville, 300 feet southwest along a powerline right-of-way, 15 feet west of a utility pole:

A—0 to 6 inches; very dark gray (10YR 3/1) loam; weak medium subangular blocky structure; friable; common medium and few fine roots; few fine and medium pores; extremely acid; gradual wavy boundary.

Btg1—6 to 11 inches; dark gray (10YR 4/1) clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; few fine and medium pores; few distinct clay films on faces of peds; few pockets of light gray (10YR 7/2) sandy loam; extremely acid; gradual wavy boundary.

Btg2—11 to 19 inches; gray (10YR 6/1) clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few fine pores; common fine distinct brownish yellow (10YR 6/8) masses of iron accumulation; many distinct clay films on faces of peds; few clean sand grains; extremely acid; gradual wavy boundary.

Btg3—19 to 45 inches; gray (10YR 6/1) clay; strong medium subangular blocky structure; firm; common fine and few very fine roots; few fine pores; common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; many distinct clay films on faces of peds and along old root channels; extremely acid; gradual wavy boundary.

Btg4—45 to 72 inches; light gray (10YR 7/1) clay; strong medium subangular blocky structure; firm; few fine roots; few fine pores; few clean sand grains; many medium distinct brownish yellow (10YR 6/8) and common medium distinct reddish brown (2.5YR 5/4) masses of iron accumulation; many distinct clay films on faces of peds and along old root channels; extremely acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is loam.

The Btg horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 4 to 7, and has chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is clay loam, sandy clay, or clay.

Emporia Series

The Emporia series consists of very deep, well drained, moderately slowly permeable and slowly permeable soils that formed in loamy marine sediments. These soils are on ridges and side slopes in the Southern Coastal Plain Major Land

Resource Area. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Hapludults.

Emporia soils are geographically associated with Bonneau, Coxville, Eunola, Faceville, Hornsville, McColl, Noboco, Norfolk, Nankin, Marlboro, Uchee, and Wagram soils. Bonneau, Uchee, and Wagram soils have A and E horizons that are more than 20 inches thick. Eunola and Hornsville soils have iron depletions within the upper 24 inches of the argillic horizon. McColl and Coxville soils have dominant chroma of 2 or less directly below the A or Ap horizon. Faceville, Marlboro, Noboco, and Norfolk soils are Paleudults. Nankin soils are clayey.

Typical pedon of Emporia loamy sand, 2 to 6 percent slopes; 4.7 miles south on S.C. Highway 38 from its junction with U.S. Highway 15 & 401 in Bennettsville, 2.2 miles east on Coxe Road, 500 feet north of the road:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; friable; common fine roots; moderately acid; abrupt wavy boundary.

Bt1—4 to 11 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak fine subangular blocky structure; very friable; common fine pores; few coarse sand grains; strongly acid; clear wavy boundary.

Bt2—11 to 21 inches; brownish yellow (10YR 6/6) fine sandy loam; weak medium subangular blocky structure; friable; common fine and medium pores; few distinct clay films on faces of peds; strongly acid; clear wavy boundary.

Bt3—21 to 37 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common fine and medium pores; few coarse clean sand grains; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; few fine flakes of mica; few distinct clay films on faces of peds; strongly acid; clear wavy boundary.

Bt4—37 to 45 inches; brownish yellow (10YR 6/6) sandy clay; weak fine subangular blocky structure; firm; common medium prominent red (2.5YR 4/8) and common medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation; few medium distinct light gray to gray (10YR 6/1) iron depletions; few fine flakes of mica; few distinct clay films; strongly acid; clear wavy boundary.

BC—45 to 60 inches; 38 percent reddish yellow (7.5YR 6/8), 38 percent red (2.5YR 5/8), and 24 percent gray (10YR 6/1) coarse sandy loam; weak medium subangular blocky structure; friable; few fine pores; common fine and medium flakes of mica; very few distinct light gray to gray (10YR 6/1) clay films on faces of peds; very weakly cemented; 2 percent quartzite pebbles; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. It typically is loamy sand. In eroded areas it is sandy loam.

The Bt horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8. In most pedons it has masses of iron accumulation and iron depletions in shades of red or yellow. Iron depletions commonly occur below a depth of 36 inches. The horizon is fine sandy loam, sandy clay loam, clay loam, or sandy clay.

The BC horizon has hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam, sandy clay loam, clay loam, sandy clay, or clay.

Eunola Series

The Eunola series consists of very deep, moderately well drained, moderately permeable soils that formed in loamy marine and fluvial sediments. These soils are on uplands near stream terraces in the Atlantic Coast Flatwoods and Southern Coastal

Plain Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Hapludults.

Eunola soils are geographically associated with Clayham, Coxville, Emporia, Hornsville, Ogeechee, Smithboro, and Wickham soils. Coxville and Ogeechee soils have gray horizons directly below the A horizon. Smithboro soils have gray Bt horizons within a depth of 30 inches. Emporia, Clayham, and Wickham soils do not have iron depletions within a depth of 30 inches. Hornsville soils are clayey.

Typical pedon of Eunola loamy sand, 0 to 2 percent slopes; 9.0 miles north on S.C. Highway 9 from its junction with Cottingham Boulevard in Bennettsville, 0.1 mile southwest into a wooded area:

A—0 to 5 inches; dark brown (10YR 4/3) loamy sand; weak fine granular structure; very friable; common fine and medium roots; few fine quartz gravel; strongly acid; clear wavy boundary.

Bt1—5 to 20 inches; light yellowish brown (10YR 6/4) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; few distinct clay films on faces of peds; few fine quartz gravel; strongly acid; gradual wavy boundary.

Bt2—20 to 27 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; few fine roots; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—27 to 42 inches; yellowish brown (10YR 5/4) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common medium prominent brownish yellow (10YR 6/6) masses of iron accumulation; common medium distinct light gray (10YR 7/1) iron depletions; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

BCg—42 to 51 inches; light gray (10YR 7/2) sandy loam; weak medium subangular blocky structure; friable; few medium roots; few clean coarse sand grains; common medium distinct yellowish brown (10YR 5/4) and brownish yellow (10YR 6/6) masses of iron accumulation; very strongly acid; gradual wavy boundary.

2Cg—51 to 60 inches; light gray (10YR 7/2) sand; single grained; loose; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 4. It is loamy sand.

The E horizon, if it occurs, has hue of 10YR, value of 5 to 7, and chroma of 3 or 4. It is loamy sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. It is fine sandy loam, sandy clay loam, or clay loam.

The lower part of the Bt horizon has hue of 10YR, value of 4 to 8, and chroma of 1 to 8. In most pedons it has masses of iron accumulation and iron depletions in shades of yellow, gray, or red. It is sandy clay loam, sandy clay, or clay loam.

The BC horizon has the same colors as the lower part of the Bt horizon.

The 2C horizon has hue of 10YR, value of 4 to 8, and chroma of 1 to 8. It is sand, fine sand, or loamy sand.

Faceville Series

The Faceville series consists of very deep, well drained, moderately permeable soils that formed in clayey marine sediments. These soils are on uplands of the

Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as clayey, kaolinitic, thermic Typic Kandiudults.

Faceville soils are geographically associated with Bonneau, Coxville, Emporia, Lucy, Marlboro, McColl, Noboco, Norfolk, Orangeburg, and Wagram soils. Bonneau, Lucy, and Wagram soils have A and E horizons that are more than 20 inches thick. McColl and Coxville soils have dominant chroma of 2 or less directly below the A or Ap horizon. Emporia, Noboco, and Norfolk soils have less than 35 percent clay in the Bt horizons. Marlboro soils have hue of 10YR or 7.5YR in the Bt horizons. Orangeburg soils have a fine-loamy control section.

Typical pedon of Faceville sandy clay loam, 2 to 6 percent slopes, eroded; 0.2 mile north on Academy Road from its junction with S.C. Highway 385 in Bennettsville, 0.4 mile southeast on Breeden Road, 0.5 mile northeast on a farm road, 50 feet east of the road:

Ap—0 to 2 inches; yellowish red (5YR 4/6) sandy clay loam; weak fine subangular blocky structure; friable; few fine roots; slightly acid; clear wavy boundary.

Bt1—2 to 30 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm; few fine roots; few fine pores; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—30 to 42 inches; red (2.5YR 4/8) clay; common medium distinct yellow (10YR 7/8) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—42 to 52 inches; red (2.5YR 4/8) clay; common medium distinct yellow (10YR 7/8) mottles; moderate medium subangular structure; friable; common distinct clay films on faces of peds; 1 percent rounded plinthite nodules; very strongly acid; gradual wavy boundary.

Bt4—52 to 65 inches; red (2.5YR 4/8) clay; common medium prominent reddish yellow (7.5YR 7/8) mottles; moderate medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed. Some pedons have as much as 4 percent plinthite below a depth of 40 inches.

The A or Ap horizon has hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 2 to 8. In noneroded areas it has hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 8. The content of ironstone nodules ranges from 0 to about 5 percent. The horizon typically is loamy sand or sandy loam. In eroded areas it is sandy clay loam.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. Brownish or yellowish mottles, if they occur, are below the Bt2 horizon. The horizon is sandy clay, clay loam, or clay.

Foxworth Series

The Foxworth series consists of very deep, somewhat excessively drained, very rapidly permeable and rapidly permeable soils that formed in sandy marine sediments. These soils are around the rims of depressions and on ridges and side slopes in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as thermic, coated Typic Quartzipsamments.

Foxworth soils are geographically associated with Ailey, Alpin, Autryville, Bonneau, Blanton, Candor, Lucy, Noboco, Ocilla, Uchee, and Troup soils. Alpin soils do not have mottles indicative of wetness and have lamellae. Ailey, Blanton, Bonneau, Autryville, Candor, Lucy, Noboco, Ocilla, Troup, and Uchee soils have argillic horizons.

Typical pedon of Foxworth sand, 0 to 6 percent slopes; 0.4 mile northeast on S.C. Highway 38 from its junction with S.C. Highway 34 in Brownsville, 0.1 mile west on an unpaved road, 100 feet south of the road:

Ap—0 to 9 inches; brown (10YR 4/3) sand; weak fine granular structure; very friable; common fine and medium roots; very strongly acid; clear smooth boundary.

C1—9 to 27 inches; reddish yellow (7.5YR 6/6) sand; single grained; loose; common fine roots; very strongly acid; gradual wavy boundary.

C2—27 to 40 inches; strong brown (7.5YR 5/8) sand; single grained; loose; few fine and medium roots; very strongly acid; gradual wavy boundary.

C3—40 to 58 inches; very pale brown (10YR 7/4) sand; single grained; loose; few fine and medium roots; very strongly acid; gradual wavy boundary.

C4—58 to 70 inches; very pale brown (10YR 7/3) sand; single grained; loose; few fine roots; few fine distinct yellowish brown (10YR 5/8) masses of iron accumulation; few fine distinct light gray (10YR 7/1) iron depletions; very strongly acid; clear wavy boundary.

C5—70 to 80 inches; light gray (10YR 7/2) sand; single grained; loose; very strongly acid.

The sand is more than 80 inches thick. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. Iron depletions indicative of wetness occur between depths of 48 and 72 inches.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 1 to 3. It is sand.

The upper part of the C horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. It is sand.

The lower part of the C horizon has hue of 10YR, value of 5 to 8, and chroma of 1 to 6. It is sand.

Goldsboro Series

The Goldsboro series consists of very deep, moderately well drained, moderately permeable soils that formed in loamy marine sediments. These soils are on low broad uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Paleudults.

Goldsboro soils are geographically associated with Coxville, Eunola, Hornsville, Lynchburg, Noboco, Norfolk, Persanti, and Rains soils. Coxville and Rains soils have gray horizons directly below the A horizon. Lynchburg soils are somewhat poorly drained. Persanti and Hornsville soils have a clayey particle-size control section. Noboco and Norfolk soils do not have iron depletions within a depth of 30 inches. Eunola soils have a 20 percent decrease in clay content within a depth of 60 inches.

Typical pedon of Goldsboro loamy sand, 0 to 2 percent slopes; 2.6 miles southeast on S.C. Highway 9 from its junction with S.C. Highway 381 in Clio, 1.1 miles southeast on S.C. Highway 35 & 59, about 100 feet north of the road:

Ap—0 to 5 inches; grayish brown (10YR 5/2) loamy sand; weak fine subangular blocky structure; friable; few fine roots; slightly acid; clear wavy boundary.

Bt1—5 to 19 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine and medium pores; very few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—19 to 28 inches; brownish yellow (10YR 6/8) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium pores; common medium

distinct yellowish red (5YR 5/8) and few medium prominent red (2.5YR 4/8) masses of iron accumulation; very few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—28 to 50 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; common fine and medium pores; common medium distinct strong brown (7.5YR 5/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; very few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg—50 to 65 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium pores; common coarse prominent reddish yellow (7.5YR 6/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; few distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is loamy sand.

The upper part of the Bt horizon has hue of 10YR, value of 4 to 6, and chroma of 3 to 8. It is sandy clay loam.

The lower part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 8. In most pedons it has masses of iron accumulation and iron depletions in shades red, brown, or yellow. There are few or common iron depletions indicative of wetness within a depth of 18 to 30 inches.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. The lower part of the Bt horizon and the Btg horizon are sandy clay loam or clay loam.

Hornsville Series

The Hornsville series consists of very deep, moderately well drained, moderately slowly permeable soils that formed in loamy and clayey marine sediments. These soils are on broad flats, low ridges, side slopes adjacent to drainageways, and stream terraces adjacent to large streams in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are classified as clayey, kaolinitic, thermic Aquic Hapludults.

Hornsville soils are geographically associated with Chastain, Emporia, Marlboro, Nankin, Noboco, Norfolk, Ogeechee, Smithboro, Uchee, and Wickham soils. Ogeechee soils have gray horizons directly below the A horizon. Emporia and Wickham soils have a fine-loamy particle-size control section. Uchee soils have A and E horizons that are more than 20 inches thick. Chastain soils are poorly drained and do not have argillic horizons. Smithboro soils have iron depletions directly below the A or Ap horizon. Marlboro and Norfolk soils do not have iron depletions within a depth of 48 inches. Noboco soils are fine-loamy. Nankin soils do not have mottles with chroma of 2 within 24 inches of the upper boundary of the argillic horizon.

Typical pedon of Hornsville loam, 0 to 2 percent slopes; 0.9 mile northwest on Old River Road from its junction with S.C. Highway 912 southwest of Bennettsville, 0.1 mile west on a field road, 50 feet south of the road:

Ap—0 to 6 inches; brown (10YR 4/3) loam; weak fine granular structure; friable; few fine roots; slightly acid; abrupt wavy boundary.

Bt1—6 to 13 inches; brownish yellow (10YR 6/6) clay; moderate medium subangular blocky structure; firm; few fine and medium roots; few fine and medium pores; few distinct clay films on faces of peds; moderately acid; gradual wavy boundary.

Bt2—13 to 26 inches; brownish yellow (10YR 6/6) clay; moderate medium subangular blocky structure; firm; few fine roots; few fine pores; common medium prominent red (2.5YR 4/8) and coarse distinct yellowish brown (10YR 5/8) masses of iron accumulation; few prominent clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—26 to 38 inches; brownish yellow (10YR 6/6) clay; moderate medium subangular blocky structure; firm; few fine pores; common medium distinct yellow (10YR 7/8) and prominent red (2.5YR 4/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; few distinct clay films on faces of peds; extremely acid; gradual wavy boundary.

Bt4—38 to 47 inches; 35 percent yellow (10YR 7/8), 35 percent yellowish brown (10YR 5/6), and 30 percent red (2.5YR 4/6) clay; weak fine subangular blocky structure; firm; few fine flakes of mica; extremely acid; gradual wavy boundary.

C—47 to 68 inches; 35 percent light gray (10YR 7/1), 35 percent yellowish red (5YR 5/6), and 30 percent yellowish brown (10YR 5/6) sandy clay loam; massive; friable; few fine flakes of mica; extremely acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 to 4. It typically is loam. In eroded areas it is sandy clay loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. Iron depletions are within the upper 24 inches of this horizon. The horizon is clay loam, sandy clay, or clay.

The C horizon does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam, fine sandy loam, or sandy clay loam, or it is stratified in loamy and clayey textures.

Johnston Series

The Johnston series consists of very deep, very poorly drained, moderately rapid permeable and rapidly permeable soils that formed in loamy alluvial sediments. These soils are on flood plains of the Southern Coastal Plain Major Land Resource Area. Slopes are less than 1 percent. The soils are classified as coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts.

Johnston soils are geographically associated with Ailey, Alpin, Byars, Candor, Noboco, Pamlico, and Uchee soils. Ailey, Alpin, Candor, Noboco, and Uchee soils are better drained than the Johnston soils. Byars soils are clayey. Pamlico soils have more than 18 percent organic matter in the surface layer.

Typical pedon of Johnston mucky loam, frequently flooded; 0.4 mile south on S.C. Highway 38 from its intersection with S.C. Highway 34 in Brownsville, 0.5 mile west on an unpaved road, 0.9 mile south on Berry Road to the southern edge of a field, 800 feet northeast along the edge of the field, 100 feet southeast into a wooded area:

A1—0 to 23 inches; black (10YR 2/1) mucky loam; weak fine granular structure; very friable; many fine, medium, and coarse roots; common fine pores and worm holes; very strongly acid; gradual wavy boundary.

A2—23 to 40 inches; black (10YR 2/1) coarse sandy loam; weak fine subangular blocky structure; friable; common fine and medium roots; common fine pores and worm holes; few streaks of clean sand along old root channels; very strongly acid; gradual wavy boundary.

Cg1—40 to 52 inches; dark gray (10YR 4/1) loamy coarse sand; massive; friable; few very fine and fine roots; few medium faint gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Cg2—52 to 60 inches; 30 percent dark gray (10YR 4/1), 35 percent gray (10YR 5/1), and 35 percent light gray (10YR 7/1) loamy coarse sand; massive; friable; few very fine and fine roots; common clean sand grains; very strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. The organic matter content of the A horizon ranges from 8 to 18 percent.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is mucky loam.

The Cg horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. It is sand or loamy coarse sand. In some pedons the lower part of the horizon has thin strata of sandy loam or sandy clay loam.

Kinston Series

The Kinston series consists of very deep, poorly drained, moderately permeable soils that formed in loamy fluvial sediments. These soils are on flood plains that drain the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, acid, thermic Typic Fluvaquents.

Kinston soils are geographically associated with Chastain, Chenneby, Emporia, Eunola, Hornsville, Ogeechee, Pamlico, and Johnston soils. Chastain soils have a clayey particle-size control section. Chenneby soils do not have dominant chroma of 2 or less directly below the A or Ap horizon. Emporia, Eunola, and Hornsville soils are better drained than the Kinston soils. Ogeechee soils have argillic horizons. Pamlico soils have an organic surface layer. Johnston soils have a coarse-loamy particle-size control section.

Typical pedon of Kinston loam, frequently flooded; 1 mile west on Hebron-Dunbar Road from its junction with Dunbar Highway in Dunbar, 0.7 mile south on an unpaved road, 100 feet east of the road:

Oi—3 inches to 0; dark brown (10YR 4/3) partially decayed cattails and wood; very strongly acid; clear wavy boundary.

A—0 to 13 inches; dark gray (10YR 4/1) loam; weak fine granular structure; nonplastic; common fine, medium, and coarse roots; strongly acid; clear wavy boundary.

Cg1—13 to 28 inches; gray (10YR 6/1) and dark gray (10YR 4/1) sandy clay loam: massive; slightly sticky, slightly plastic; few fine pores; strongly acid; gradual wavy boundary.

Cg2—28 to 42 inches; gray (10YR 5/1) clay loam; massive; slightly sticky, slightly plastic; few fine roots; very strongly acid; clear wavy boundary.

Cg3—42 to 60 inches; dark gray (10YR 4/1) and gray (10YR 6/1) sand; single grained; loose; strongly acid.

The loamy sediments range from 40 to 60 inches in thickness. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is loam.

The Cg horizon has hue of 10YR to 5Y or is neutral in hue, has value of 3 to 7, and has chroma of 1 or 2, or it has hue of 5GY to 5BG, value of 6, and chroma of 1. The upper part of the horizon is fine sandy loam, sandy loam, loam, sandy clay loam, clay loam, or silt loam. The lower part is sand, gravelly sand, or loamy sand.

Leon Series

The Leon series consists of very deep, poorly drained, moderately rapidly permeable and rapidly permeable soils that formed in sandy marine sediments. These soils are in oval depressions, along shallow drainageways, and on flood plains in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are classified as sandy, siliceous, thermic Aeric Alaquods.

Leon soils are geographically associated with Blanton, Foxworth, Johnston, Ocilla, Pamlico, and Rains soils. These associated soils do not have a spodic horizon.

Typical pedon of Leon sand; 0.5 mile northeast on S.C. Highway 34 from its junction with S.C. Highway 38 in Brownsville, 500 feet west of the road:

O—3 inches to 0; partially decayed roots.

A—0 to 3 inches; black (10YR 2/1) sand; weak fine granular structure; friable; many fine roots; many fine clean sand grains; strongly acid; clear smooth boundary.

E—3 to 28 inches; white (10YR 8/1) sand; single grained; loose; common fine and medium roots; very strongly acid; clear wavy boundary.

Bh1—28 to 40 inches; dark reddish brown (5YR 3/2) sand; massive; friable; few fine, medium, and coarse roots; very strongly acid; gradual wavy boundary.

Bh2—40 to 48 inches; dark brown (10YR 4/3) sand; single grained; loose; few fine and coarse roots; very strongly acid; gradual wavy boundary.

Cg—48 to 60 inches; light brownish gray (2.5Y 6/2) sand; single grained; loose; very strongly acid.

Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR or is neutral in hue, has value of 2 to 4, and has chroma of 0 or 2. It is sand.

The E horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 1 to 8. It is sand.

The Bh horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3. It is sand or loamy sand.

The Cg or 2Cg horizon has hue of 10YR to 2.5Y, value of 4 to 8, and chroma of 1 to 6. It is sand or fine sand.

Lucy Series

The Lucy series consists of very deep, well drained, moderately permeable soils that formed in sandy and loamy marine sediments. These soils are on low ridges and side slopes in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as loamy, siliceous, thermic Arenic Kandiudults.

Lucy soils are geographically associated with Bonneau, Candor, Coxville, Emporia, Faceville, Noboco, Norfolk, Orangeburg, and Troup soils. Troup soils are grossarenic. Candor soils have sandy Bt horizons. Bonneau soils have Bt horizons that have hue of 10YR or yellower. Coxville soils have gray horizons directly below the A horizon. Faceville, Emporia, Noboco, Norfolk, and Orangeburg soils do not have an arenic epipedon.

Typical pedon of Lucy sand, 0 to 6 percent slopes; 0.4 mile northwest from the junction of Williamette Road and S.C. Highway 912 southwest of Bennettsville, 2 miles northwest on David Mill Road, 0.5 mile west on a farm road, 100 feet north of the road:

Ap—0 to 8 inches; dark brown (10YR 4/3) sand; single grained; loose; common fine and medium roots; strongly acid; clear wavy boundary.

E—8 to 22 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; very friable; few fine roots; few clean sand grains; very strongly acid; gradual wavy boundary.
Bt1—22 to 31 inches; yellowish brown (10YR 5/8) sandy loam; weak fine subangular blocky structure; friable; few fine roots; 1 percent quartz gravel; strongly acid; gradual wavy boundary.
Bt2—31 to 39 inches; red (2.5YR 4/8) sandy loam; weak fine subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.
Bt3—39 to 67 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable; few quartz gravel; few distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. It is sand.

The E horizon has hue of 7.5YR to 10YR, value of 5 to 7, and chroma of 3 to 8. It is sand or loamy sand.

The Bt horizon dominantly has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8. Where it has hue of 10YR, the horizon is less than 10 inches thick. The lower part of the horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 to 8. The horizon is sandy loam or sandy clay loam.

Lynchburg Series

The Lynchburg series consists of very deep, somewhat poorly drained, moderately permeable soils that formed in loamy marine sediments. These soils are on low broad uplands and in slight depressions in the Southern Coastal Plain Major Land Resource Area. Slopes are less than 2 percent. The soils are classified as fine-loamy, siliceous, thermic Aeric Paleaquults.

Lynchburg soils are geographically associated with Coxville, Goldsboro, Noboco, Norfolk, Rains, and Smithboro soils. Coxville and Rains soils have gray horizons directly below the A or Ap horizon. Smithboro soils have a clayey particle-size control section. Goldsboro, Noboco, and Norfolk soils do not have a horizon that is dominantly gray within a depth of 30 inches.

Typical pedon of Lynchburg sandy loam; 3.6 miles west on Airport Road from its junction with Cottingham Boulevard in Bennettsville, 234 feet north of the road:

Ap—0 to 11 inches; dark gray (10YR 4/1) sandy loam; weak fine subangular blocky structure; very friable; common fine and medium and few coarse roots; few fine pores; strongly acid; gradual wavy boundary.
BE—11 to 17 inches; pale brown (10YR 6/3) sandy loam; weak fine subangular blocky structure; friable; few fine and coarse roots; few fine pores; common medium distinct yellow (10YR 7/8) masses of iron accumulation; few fine faint light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual wavy boundary.
Bt—17 to 26 inches; 50 percent light yellowish brown (2.5Y 6/4) and 50 percent light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; few faint white (10YR 8/1) skeletans between faces of peds; few medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid; gradual wavy boundary.
Btg1—26 to 33 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common medium distinct brownish yellow (10YR 6/8) and yellowish red (5YR 5/8) and few medium

prominent red (2.5YR 4/8) masses of iron accumulation; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Btg2—33 to 53 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common medium prominent reddish yellow (7.5YR 6/8) masses of iron accumulation; strongly acid; gradual wavy boundary.

Btg3—53 to 63 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; very friable; common medium prominent reddish yellow (5YR 6/8) and common medium distinct brownish yellow (10YR 6/8) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is sandy loam.

The BE horizon has hue of 10YR, value of 4 to 7, and chroma of 1 to 4. It is sandy loam. Masses of iron accumulation and iron depletions in shades of yellow or gray range from none to common.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam, sandy clay loam, or clay loam.

The Btg horizon has hue of 10YR to 2.5Y, value of 4 to 7, and chroma of 0 to 2. In most pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy clay loam or clay loam.

Marlboro Series

The Marlboro series consists of very deep, well drained, moderately permeable soils that formed in clayey marine sediments. These soils are on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as clayey, kaolinitic, thermic Typic Paleudults.

Marlboro soils are geographically associated with Bonneau, Coxville, Emporia, Faceville, McColl, Noboco, Norfolk, and Persanti soils. Bonneau soils have A and E horizons that are more than 20 inches thick. Persanti soils have iron depletions that have chroma of 2 or less within a depth of 30 inches. McColl and Coxville soils have dominant chroma of 2 or less directly below the A or Ap horizon. Emporia, Noboco, and Norfolk soils have a fine-loamy particle-size control section. Faceville soils have hue of 5YR or redder in the Bt horizon.

Typical pedon of Marlboro fine sandy loam, moderately wet, 0 to 2 percent slopes; 5.5 miles south on S.C. Highway 38 from its junction with U.S. Highway 15 in Bennettsville, 0.2 mile northeast on an unpaved road, 100 feet east of the road:

Ap—0 to 5 inches; brown (10YR 5/3) fine sandy loam; weak fine granular structure; friable; few fine roots; few clean sand grains; moderately acid; clear smooth boundary.

E—5 to 7 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; less than 1 percent plinthite nodules; moderately acid; gradual wavy boundary.

Bt1—7 to 15 inches; brownish yellow (10YR 6/8) clay; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few distinct clay films on faces of peds; less than 1 percent plinthite nodules; very strongly acid; gradual wavy boundary.

Bt2—15 to 32 inches; brownish yellow (10YR 6/8) clay loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; less than 1

percent plinthite nodules; common medium distinct yellowish red (5YR 5/8) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Bt3—32 to 53 inches; brownish yellow (10YR 6/6) clay; strong medium subangular blocky structure; firm; common fine pores; less than 1 percent plinthite nodules; common medium prominent red (2.5YR 4/8) masses of iron accumulation; few uncoated quartz grains; extremely acid; gradual wavy boundary.

Bt4—53 to 63 inches; 35 percent brownish yellow (10YR 6/6), 35 percent gray (10YR 6/1), and 30 percent red (2.5YR 4/8) clay; moderate medium subangular blocky and weak medium prismatic structure; firm; less than 1 percent plinthite nodules; few clean sand grains; very strongly acid; gradual wavy boundary.

BC—63 to 70 inches; 35 percent brownish yellow (10YR 6/8), 35 percent light gray (10YR 7/1), and 35 percent red (2.5YR 5/8) clay loam; firm; few fine flakes of mica; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction ranges from very strongly acid to moderately acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 4. It is fine sandy loam.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 5. It is fine sandy loam.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. It is clay loam, sandy clay, or clay.

The lower part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is clay loam, sandy clay, or clay.

McColl Series

The McColl series consists of very deep, poorly drained, slowly permeable soils that formed in clayey and loamy sediments of the Southern Coastal Plain Major Land Resource Area. These soils are in oval depressions. Slopes are less than 1 percent. The soils are classified as clayey, kaolinitic, thermic Typic Fragiaquults.

McColl soils are geographically associated with Coxville and Rains soils. These associated soils do not have brittle horizons.

Typical pedon of McColl loam; 0.8 mile northeast on U.S. Highway 15 & 401 from the United States Post Office in Tatum, 0.6 mile west on Adamsville Road, 180 feet southwest of the road:

Ap—0 to 9 inches; very dark gray (10YR 3/1) loam; weak fine subangular blocky structure; friable; common fine roots; moderately acid; clear wavy boundary.

Btg—9 to 17 inches; gray (10YR 6/1) sandy clay; moderate medium subangular blocky structure; friable; few medium roots; few fine pores; common fine faint pale brown (10YR 6/3) and common fine distinct yellowish brown (10YR 5/8) masses of iron accumulation; many distinct clay films on faces of peds; few medium pebbles; extremely acid; clear wavy boundary.

Btx—17 to 26 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine and medium pores; few medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; common fine distinct gray (10YR 6/1) iron depletions; common distinct clay films on faces of peds in gray part; few medium white and common fine quartz pebbles;

many coarse clean sand grains; yellow part is brittle; very strongly acid; gradual wavy boundary.

B´tg—26 to 37 inches; gray (10YR 6/1) sandy clay; weak medium subangular blocky structure; friable; few fine roots; common medium distinct brownish yellow (10YR 6/8), common fine prominent red (2.5YR 5/8), and common medium distinct reddish yellow (7.5YR 6/8) masses of iron accumulation; many fine flakes of mica; many distinct clay films on faces of peds; extremely acid; gradual wavy boundary.

BCg1—37 to 43 inches; gray (10YR 5/1) sandy clay; weak medium subangular blocky structure; friable; reddish yellow and red parts are sandy loam; common medium distinct reddish yellow (7.5YR 6/8), common medium prominent red (2.5YR 4/6), and common medium faint gray (10YR 6/1) masses of iron accumulation; extremely acid; clear wavy boundary.

BCg2—43 to 48 inches; reddish yellow (7.5YR 6/8) sandy loam; massive; very friable; few medium and coarse pebbles; extremely acid; gradual wavy boundary.

Cg—48 to 85 inches; 50 percent light gray (N 7/0) and 50 percent reddish yellow (7.5YR 6/8) sandy loam and sandy clay loam; massive; friable; many fine flakes of mica; extremely acid.

The thickness of the solum ranges from 40 to more than 60 inches. The depth to the brittle or dense layer ranges from 12 to 36 inches. Some pedons have nodules of plinthite totalling less than 5 percent, by volume. Some pedons have few or common concretions of ironstone. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is loam.

The Btg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 0 to 2. It is clay loam, sandy clay, or clay.

The Btx horizon has hue of 7.5YR or 10YR, value of 5, and chroma of 4 to 8. In some pedons it has red masses of iron accumulation. It is sandy clay loam, clay loam, or sandy clay.

The BC or BCg horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 0 to 8. It is sandy loam, sandy clay loam, or sandy clay, or it is stratified in these textures.

The C or Cg horizon has hue of 7.5YR to 2.5Y or is neutral in hue, has value of 1 to 8, and has chroma of 0 to 6, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam or sandy clay loam, or it is stratified in sandy to clayey textures.

Nankin Series

The Nankin series consists of very deep, well drained, moderately slowly permeable soils that formed in clayey marine sediments. These soils are on uplands, on side slopes leading to drainageways, and on stream terraces adjacent to flood plains in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 10 percent. The soils are classified as clayey, kaolinitic, thermic Typic Kanhapludults.

Nankin soils are geographically associated with Coxville, Emporia, Eunola, Faceville, Hornsville, Kinston, Noboco, Persanti, Ogeechee, Smithboro, and Uchee soils. Uchee soils have A and E horizons that are more than 20 inches thick. Eunola and Hornsville soils have iron depletions within 24 inches of the top of the argillic horizon. Coxville, Ogeechee, and Kinston soils have dominant chroma of 2 or less directly below the A horizon. Faceville and Noboco soils do not have iron depletions

within a depth of 48 inches. Emporia soils are fine-loamy. Persanti soils do not have a decrease in clay content of more than 20 percent within a depth of 60 inches. Smithboro soils have iron depletions within a depth of 30 inches.

Typical pedon of Nankin loamy fine sand, 2 to 6 percent slopes; 4.6 miles south on S.C. Highway 38 from its junction with U.S. Highway 15 & 401 in Bennettsville, 0.9 mile east on Coxe Road, 0.1 mile southeast on Odom Lane, 150 feet northwest of the road:

Ap—0 to 6 inches; light yellowish brown (10YR 6/4) loamy fine sand; weak fine subangular blocky structure; friable; few fine roots; moderately acid; clear wavy boundary.

Bt1—6 to 10 inches; reddish yellow (7.5YR 6/8) sandy clay; moderate medium subangular blocky structure; friable; few fine roots; few large pores; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt2—10 to 27 inches; yellowish red (5YR 5/8) clay; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; common medium distinct red (2.5YR 4/8) masses of iron accumulation; many distinct clay films on faces of peds; few fine pebbles; strongly acid; gradual wavy boundary.

Bt3—27 to 36 inches; yellowish red (5YR 5/6) clay; moderate medium subangular blocky structure; few fine roots; few fine pores; common medium distinct brownish yellow (10YR 6/8) and common medium distinct red (2.5YR 4/8) masses of iron accumulation; many distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt4—36 to 47 inches; 35 percent brownish yellow (10YR 6/8), 35 percent reddish yellow (7.5YR 6/8), and 30 percent red (2.5YR 4/6) sandy clay; moderate medium subangular blocky structure; friable; few fine roots; few fine and medium pores; few fine flakes of mica; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

BC—47 to 57 inches; brownish yellow (10YR 6/8) and yellowish red (5YR 5/8) sandy clay; weak medium subangular blocky structure; friable; common medium distinct yellowish red (5YR 5/8) masses of iron accumulation; many medium distinct light gray (10YR 7/1) iron depletions; common fine flakes of mica; few distinct clay films on the yellowish red peds; very strongly acid; gradual wavy boundary.

C—57 to 65 inches; 30 percent reddish yellow (7.5YR 6/8), 30 percent red (2.5YR 4/8), 25 percent light gray (10YR 7/1), and 15 percent yellow (10YR 7/8) sandy clay loam; massive; friable; common fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 7.5YR, value of 3 to 6, and chroma of 1 to 5. It typically is loamy fine sand. In eroded areas it is sandy clay loam.

The Bt horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8. In most pedons it has masses of iron accumulation in shades of yellow or red. Iron depletions are below the upper 24 inches of the argillic horizon. The Bt horizon is clay loam, sandy clay, or clay.

The BC horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam or sandy clay loam.

The C horizon has hue of 2.5YR to 10YR, value of 4 to 7, and chroma of 1 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam or sandy clay loam.

Noboco Series

The Noboco series consists of very deep, well drained, moderately permeable soils that formed in loamy marine sediments. These soils are on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Paleudults.

Noboco soils are geographically associated with Bonneau, Coxville, Emporia, Faceville, Goldsboro, Hornsville, Marlboro, McColl, Nankin, Norfolk, Rains, Uchee, and Wagram soils. Bonneau, Uchee, and Wagram soils have A and E horizons that are more than 20 inches thick. Goldsboro soils have iron depletions within a depth of 30 inches. Coxville, McColl, and Rains soils have dominant chroma of 2 or less directly below the A or Ap horizon. Norfolk and Marlboro soils have iron depletions at a depth of more than 48 inches. Emporia, Hornsville, and Nankin soils are Hapludults. Faceville soils have hue of 5YR or redder in the Bt horizon and are clayey.

Typical pedon of Noboco loamy sand, 0 to 2 percent slopes; 1.8 miles southeast on S.C. Highway 9 from its junction with S.C. Highway 381 in Clio, 300 feet southwest of the road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; few fine roots; common clean sand grains; slightly acid; clear wavy boundary.

E—6 to 13 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine roots; slightly acid; clear wavy boundary.

Bt1—13 to 28 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine and medium pores; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—28 to 38 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium pores; common medium distinct light yellowish brown (10YR 6/4) and common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; few distinct clay films on faces of peds; 1 percent plinthite nodules; very strongly acid; gradual wavy boundary.

Bt3—38 to 48 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; many fine and medium pores; common medium prominent red (2.5YR 4/8) masses of iron accumulation; few medium distinct grayish brown (10YR 6/2) iron depletions; few distinct clay films on faces of peds; 2 percent plinthite nodules; very strongly acid; gradual wavy boundary.

Bt4—48 to 62 inches; 30 percent light yellowish brown (10YR 6/4), 30 percent yellowish red (5YR 5/8), 25 percent gray (10YR 6/1), and 15 percent light yellowish brown (10YR 6/4) sandy clay loam; moderate medium subangular blocky structure; friable; few fine pores; few distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. Some pedons have as much as 4 percent plinthite. Iron depletions are at a depth of 31 to 48 inches.

The A or Ap horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It typically is loamy sand. In eroded areas it is sandy loam.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is loamy sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam or sandy clay loam.

The lower part of the Bt horizon has the same colors as the upper part and has masses of iron accumulation and iron depletions in shades of gray, red, yellow, or brown, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. The lower part is sandy loam or sandy clay loam. In some pedons the Bt horizon includes thin layers of sandy clay below a depth of 40 inches.

Norfolk Series

The Norfolk series consists of very deep, well drained, moderately permeable soils that formed in loamy marine sediments. These soils are on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Kandiudults.

Norfolk soils are geographically associated with Bonneau, Coxville, Emporia, Faceville, Goldsboro, McColl, Noboco, Marlboro, Persanti, Rains, Uchee, and Wagram soils. Bonneau, Uchee, and Wagram soils have A and E horizons that are more than 20 inches thick. Goldsboro and Persanti soils have iron depletions within a depth of 30 inches. McColl, Coxville, and Rains soils have dominant chroma of 2 or less directly below the A or Ap horizon. Noboco soils have gray iron depletions within a depth of 48 inches. Emporia soils have a decrease in clay content of more than 20 percent within a depth of 60 inches. Faceville soils have hue of 5YR or redder in the Bt horizon. Marlboro soils have a clayey particle-size control section.

Typical pedon of Norfolk loamy sand, 0 to 2 percent slopes; 1.8 miles south on U.S. Highway 15 & 401 from its junction with Tatum Road in Tatum, 100 feet south of the road:

Ap—0 to 7 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; slightly acid; clear wavy boundary.

E—7 to 15 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Bt1—15 to 42 inches; yellowish brown (10YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Bt2—42 to 47 inches; brownish yellow (10YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; many fine and medium roots; few fine and medium pores; common fine and medium distinct yellowish red (5YR 5/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—47 to 63 inches; brownish yellow (10YR 6/8) sandy clay loam; weak fine medium subangular blocky structure; friable; many fine and medium roots; many fine pores; common medium prominent red (2.5YR 4/8) and few fine distinct pale brown (10YR 6/3) masses of iron accumulation; few distinct clay films on faces of peds; about 2 percent plinthite nodules; strongly acid; gradual wavy boundary.

Bt4—63 to 72 inches; 35 percent brownish yellow (10YR 6/8), 30 percent red (2.5YR 4/8), and 35 percent gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine pores; few distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. Some pedons contain as much as 4 percent plinthite in the lower part of the argillic horizon.

The A horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. It typically is loamy sand. In eroded areas it is sandy loam.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is loamy sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. In some pedons it has masses of iron accumulation in shades of red, yellow, or brown. It is sandy loam or sandy clay loam.

The lower part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 8. In most pedons it has masses of iron accumulation in shades red, brown, or yellow. Iron depletions are below a depth of 48 inches. The lower part of the Bt horizon is sandy clay loam or clay loam.

Ocilla Series

The Ocilla series consists of very deep, somewhat poorly drained, moderately permeable soils that formed in loamy marine sediments. These soils are on broad nearly level flats, in oval depressions, and on stream terraces in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 2 percent. The soils are classified as loamy, siliceous, thermic Aquic Arenic Paleudults.

Ocilla soils are geographically associated with Autryville, Blanton, Foxworth, Leon, and Rains soils. Rains soils have argillic horizons within a depth of 20 inches. Blanton soils are grossarenic. Autryville soils are bisequal. Foxworth soils are sandy throughout. Leon soils have a spodic horizon within a depth of 20 inches.

Typical pedon of Ocilla sand, 0 to 4 percent slopes; 0.5 mile south on Hunt's Bluff Road from its junction with S.C. Highway 38 in Blenheim, 1.0 mile west on Gravel Pit Road, 0.7 mile southwest on Evans Road, 0.2 mile west on an unpaved road, 0.1 mile northwest on the unpaved road, 50 feet east of the road:

A—0 to 9 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

E1—9 to 18 inches; pale brown (10YR 6/3) sand; single grained; loose; few fine and medium roots; strongly acid; clear smooth boundary.

E2—18 to 23 inches; gray (10YR 6/2) sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

Bt—23 to 32 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine distinct brownish yellow (10YR 6/8) masses of iron accumulation; few fine quartz pebbles; strongly acid; gradual wavy boundary.

Btg1—32 to 42 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; common medium distinct brownish yellow (10YR 6/8) and common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; few distinct clay films on faces of peds; few quartz pebbles; very strongly acid; gradual wavy boundary.

Btg2—42 to 60 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; few fine distinct reddish yellow (7.5YR 6/8) and few fine distinct brownish yellow (10YR 6/8) masses of iron accumulation; few distinct clay films on faces of peds; few clean sand grains; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. It is sand.

The E horizon has hue of 10YR, value of 4 to 8, and chroma of 1 to 4. It is sand.

The Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 2 to 8. In most pedons it has masses of iron accumulation and iron depletions in shades of yellow, gray, or brown. It is sandy loam or sandy clay loam.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades of red or brown. It is sandy loam, sandy clay loam, or sandy clay.

Ogeechee Series

The Ogeechee series consists of very deep, poorly drained, moderately permeable soils that formed in loamy marine sediments. These soils are on broad nearly level flats, on stream terraces, in oval depressions, and along drainageways in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Endoaquults.

Ogeechee soils are geographically associated with Rains, Ocilla, Hornsville, Eunola, Emporia, and Paxville soils. Rains soils do not have a 20 percent decrease in clay content within a depth of 60 inches. Ocilla soils are arenic. Hornsville, Eunola, and Emporia soils do not have matrix chroma of 2 or less directly below the A or Ap horizon. Paxville soils have an umbric epipedon.

Typical pedon of Ogeechee sandy loam; 1.1 miles south on Brickyard Road from its junction with S.C. Highway 9 in Wallace, 1.0 mile northeast on Hickson Road, 125 feet south of the road:

Ap—0 to 9 inches; very dark gray (10YR 3/1) sandy loam; weak fine subangular blocky structure; friable; common very fine and fine roots; neutral; abrupt wavy boundary.

Btg1—9 to 42 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Btg2—42 to 56 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; common medium prominent yellow (10YR 7/8) masses of iron accumulation; few distinct clay films of faces of peds; 1 percent quartz gravel; strongly acid; gradual wavy boundary.

BCg—56 to 62 inches; light gray (10YR 7/2) sandy loam; weak medium subangular blocky structure; friable; few fine flakes of mica; strongly acid; clear wavy boundary.

Cg—62 to 72 inches; light gray (10YR 7/2) sand; single grained; loose; few fine flakes of mica; strongly acid.

The thickness of the solum ranges from 50 to 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is sandy loam.

The Btg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. Masses of iron accumulation in shades of red, yellow, or brown range from none to common. The horizon is dominantly sandy clay loam or clay loam but ranges to sandy clay or clay in the lower part.

The BCg horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2. Masses of iron accumulation in shades of red, yellow, or brown range from none to common. The horizon is sandy loam or sandy clay loam.

The Cg horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 5 to 8, and has chroma of 0 to 2. It ranges from sand to sandy clay loam, or it is stratified in sandy to clayey textures.

Orangeburg Series

The Orangeburg series consists of very deep, well drained, moderately permeable soils that formed in loamy marine sediments. These soils are on uplands of the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Kandiudults.

Orangeburg soils are geographically associated with Emporia, Faceville, Norfolk, Noboco, Lucy, Rains, and Troup soils. Emporia soils have a decrease in clay content of more than 20 percent within a depth of 60 inches. Faceville soils have more than 35 percent clay in the Bt horizons. Norfolk and Noboco soils have Bt horizons that dominantly have hue of 7.5YR or yellower. Lucy soils are arenic. Troup soils are grossarenic. Rains soils are gray directly below the A or Ap horizon.

Typical pedon of Orangeburg loamy sand, 0 to 2 percent slopes; 1.9 miles west on Williamette Road from its junction with U.S. Highway 15 & 401 south of Bennettsville, 75 feet north of the road:

Ap—0 to 7 inches; brown (10YR 5/3) loamy sand; weak fine granular structure; very friable; common fine and medium roots; moderately acid; clear wavy boundary.

E—7 to 17 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine roots; moderately acid; clear wavy boundary.

Bt1—17 to 47 inches; red (2.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; common distinct clay films on faces of peds; many clean sand grains; strongly acid; gradual wavy boundary.

Bt2—47 to 75 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; few fine roots; few fine pores; few distinct clay films on faces of peds; strongly acid.

The thickness of the solum is more than 72 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6. It is loamy sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It is loamy sand.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8. It is dominantly sandy loam or sandy clay loam but ranges to sandy clay in the lower part.

Pamlico Series

The Pamlico series consists of very deep, very poorly drained soils that are moderately permeable or moderately rapidly permeable in the organic layers and slowly permeable to very rapidly permeable in the mineral layers. These soils formed in decomposed organic matter overlying dominantly sandy fluvial sediments. They are on nearly level flood plains in the Southern Coastal Plain Major Land Resource Area. Slopes are less than 1 percent. The soils are classified as sandy or sandy-skeletal, siliceous, dysic, thermic Terric Medisaprists.

Pamlico soils are geographically associated with Kinston and Johnston soils. These associated soils are mineral soils.

Typical pedon of Pamlico muck, frequently flooded; 0.2 mile west on Fore Road from its junction with S.C. Highway 38 east of Brownsville, 1.4 miles south on Berry Road, 0.2 mile west in a wooded area:

Oa1—0 to 20 inches; black (10YR 2/1) muck; 10 percent fiber rubbed and unrubbed; friable; common fine, medium, and coarse roots; very strongly acid; gradual wavy boundary.

Oa2—20 to 42 inches; dark grayish brown (10YR 3/2) muck; common fine and medium and few coarse roots; very strongly acid; gradual wavy boundary.

2Cg—42 to 60 inches; light gray (10YR 6/1) sand; single grained; loose; very strongly acid.

The thickness of organic material over dominantly sandy sediments ranges from 16 to 51 inches. Reaction is extremely acid in the organic layers but ranges to strongly acid in the mineral layers.

The Oa horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 0 to 2. The content of fiber is 10 to 33 percent after rubbing and less than 10 percent before rubbing.

The Cg or 2Cg horizon has hue of 10YR or is neutral in hue, has value of 2 to 6, and has chroma of 0 to 2. It is sand. In some pedons, lower Cg or 2Cg horizons occurring below a depth of 51 inches are variable in texture, ranging from sand to sandy clay loam.

Paxville Series

The Paxville series consists of very deep, very poorly drained, moderately permeable soils that formed in loamy fluvial or marine sediments. These soils are on broad level flats, on stream terraces, in oval depressions, and along drainageways in the Southern Coastal Plain Major Land Resource Area. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Umbraquults.

Paxville soils are geographically associated with Rains, Johnston, Kinston, Leon, Ogeechee, and Pamlico soils. Johnston soils have less than 18 percent clay in the control section. Leon soils have spodic horizons. Kinston soils do not have argillic horizons. Ogeechee soils have ochric epipedons. Pamlico soils have an organic surface layer. Rains soils do not have an umbric epipedon and do not have a decrease in clay content of 20 percent or more within a depth of 60 inches.

Typical pedon of Paxville fine sandy loam; 0.85 mile southwest of the intersection of U.S. Highway 15 & 401 and Main Street in Bennettsville, 0.9 mile to McCalls Mill Pond Road, 0.7 mile west on McCalls Mill Pond Road, 50 feet south of the road:

A—0 to 14 inches; black (10YR 2/1) fine sandy loam; weak fine subangular blocky structure; very friable; common coarse and many medium and fine roots; few worm holes; few clean sand grains; very strongly acid; clear wavy boundary.

Btg1—14 to 23 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; slightly sticky, slightly plastic; common medium and fine roots; few distinct clay films on faces of peds; few clean sand grains; very strongly acid; gradual wavy boundary.

Btg2—23 to 38 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; plastic; common medium and fine roots; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

BCg—38 to 45 inches; grayish brown (10YR 5/2) sandy loam; weak fine subangular blocky structure; nonsticky; few fine faint pale brown (10YR 6/3) masses of iron accumulation; very strongly acid; gradual wavy boundary.

Cg—45 to 60 inches; light gray (10YR 7/1) sand; single grained; loose; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is fine sandy loam.

The Btg horizon has hue of 10YR, value of 3 to 7, and chroma of 1 or 2. In some pedons it has masses of iron accumulation in shades of brown or yellow. It is sandy loam, loam, or sandy clay loam.

The BCg horizon has hue of 10YR or is neutral in hue, has value of 3 to 7, and has chroma of 0 to 3. In some pedons it has masses of iron accumulation in shades of brown or yellow. It is loamy sand, sandy loam, or fine sandy loam.

The Cg horizon has hue of 10YR to 2.5Y or is neutral in hue, has value of 4 to 7, and has chroma of 0 to 3. It is coarse sand, sand, fine sand, or loamy sand.

Pelion Series

The Pelion series consists of very deep, moderately well drained, moderately slowly permeable and slowly permeable soils that formed in loamy marine sediments. These soils are in nearly level and gently sloping areas of the Carolina and Georgia Sand Hills and Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, siliceous, thermic Aquic Kanhapludults.

Pelion soils are geographically associated with Ailey, Alpin, Blanton, Cowarts, Candor, Emporia, Johnston, Ogeechee, Pamlico, Troup, and Uchee soils. Ailey, Candor, and Uchee soils have a sandy epipedon that is more than 20 inches thick. Blanton and Troup soils have a sandy epipedon that is more than 40 inches thick. Alpin soils are sandy throughout. Emporia soils do not have a high water table within 24 inches of the top of the argillic horizon. Johnston and Pamlico soils occur on flood plains and are very poorly drained. Ogeechee soils are poorly drained and have matrix chroma of 2 or less throughout. Cowarts soils do not have iron depletions indicative of wetness in the upper 24 inches of the argillic horizon.

Typical pedon of Pelion loamy sand, 0 to 2 percent slopes; 3.9 miles north on Hickory Grove Road from its intersection with S.C. Highway 9 near Bennettsville, 1.4 miles north on Aaron Temple Church Road, 100 feet east of the road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; common fine, medium, and coarse roots; 3 percent quartz gravel; strongly acid; clear wavy boundary.

E—6 to 14 inches; pale brown (10YR 6/3) loamy sand; weak fine granular structure; very friable; common fine and medium roots; 4 percent quartz gravel; strongly acid; clear wavy boundary.

Bt1—14 to 24 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; common fine faint light yellowish brown (10YR 6/4) masses of iron accumulation; few fine flakes of mica; very few distinct clay films on faces of peds and in pores; 3 percent quartz gravel; very strongly acid; gradual wavy boundary.

Bt2—24 to 37 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; common medium faint light yellowish brown (10YR 6/4) masses of iron accumulation; common medium distinct light gray (10YR 6/1) iron depletions; few fine flakes of mica; very few distinct clay films on faces of peds and in pores; 2 percent quartz gravel; very strongly acid; gradual wavy boundary.

Bt3—37 to 44 inches; 30 percent light gray (10YR 6/1), 30 percent brownish yellow (10YR 6/6), 30 percent yellowish brown (10YR 5/4), and 10 percent reddish brown (5YR 5/4) sandy clay loam; moderate medium subangular blocky structure parting to moderate fine subangular blocky; firm; few fine pores; very few distinct clay films on faces of peds and in pores; about 20 percent of the horizon is firm and brittle; very strongly acid; clear wavy boundary.

Bt4—44 to 57 inches; 35 percent light gray (10YR 6/1), 35 percent brownish yellow (10YR 6/6), and 30 percent red (2.5YR 4/8) sandy loam; weak medium subangular blocky structure and massive; friable; red and brownish yellow part is compact and slightly brittle sandy loam comprising about 60 percent of the horizon; gray part is firm; red and yellow part is friable; strongly acid; gradual wavy boundary.

BCg—57 to 63 inches; light gray (10YR 6/1) sandy loam; massive; friable; common medium distinct brownish yellow (10YR 6/8) and prominent red (2.5YR 4/8) masses of iron accumulation; strongly acid.

The thickness of the solum ranges from 40 to more than 72 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. Some subhorizons in the B horizon have 10 to 60 percent brittleness. In most pedons the lower part of the B horizon and the C horizon have few or common flakes of mica. In some pedons the B and C horizons have balls or strata of white or gray kaolin clay.

The A or Ap horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is loamy sand.

The E horizon has hue of 10YR, value of 4 to 8, and chroma of 0 to 4. It is sand or loamy sand.

The upper part of the Bt horizon has hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 6 or 8. In most pedons it has masses of iron accumulation in shades of yellow, brown, or red. Iron depletions are within the upper 24 inches of the argillic horizon. The upper part of the Bt horizon is sandy clay loam.

The lower part of the Bt horizon of has hue of 7.5YR to 10YR, value of 5 to 8, and chroma of 1 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy clay loam, sandy clay, or clay.

The BCg horizon has hue of 2.5YR to 2.5Y, value of 4 to 8, and chroma of 1 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is sandy loam or sandy clay loam, or it is stratified in loamy to clayey textures.

Persanti Series

The Persanti series consists of very deep, moderately well drained, slowly permeable soils that formed in clayey marine sediments. These soils are on broad uplands and old stream terraces in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are classified as clayey, kaolinitic, thermic Aquic Paleudults.

Persanti soils are geographically associated with Coxville, Hornsville, Goldsboro, Kinston, Marlboro, Nankin, Noboco, and Smithboro soils. Coxville and Kinston soils have gray horizons directly below the A or Ap horizon. Smithboro soils have gray Bt horizons within a depth of 30 inches. Goldsboro soils are fine-loamy. Marlboro and Noboco soils do not have iron depletions within a depth of 30 inches. Hornsville and Nankin soils are Hapludults.

Typical pedon of Persanti loam, 0 to 2 percent slopes; 4.9 miles south on S.C. Highway 38 from its junction with U.S. Highway 15 & 401 in Bennettsville, 0.5 mile west on Coxe Road, 175 feet north of the road:

A—0 to 7 inches; brown (10YR 5/3) loam; weak medium subangular blocky structure; friable; few fine roots; strongly acid; clear wavy boundary.

Bt1—7 to 23 inches; brownish yellow (10YR 6/6) clay; strong medium subangular blocky structure; firm; few fine roots; common fine pores; common medium distinct reddish yellow (7.5YR 6/6) masses of iron accumulation; few distinct clay films on

faces of peds; few rounded ironstone nodules; very strongly acid; gradual wavy boundary.

Bt2—23 to 49 inches; brownish yellow (10YR 6/6) clay; strong medium subangular blocky structure; firm; few fine pores; common medium distinct yellowish red (5YR 5/8) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—49 to 60 inches; 25 percent gray (10YR 6/1), 25 percent yellow (10YR 7/8), 25 percent yellowish red (5YR 5/8), and 25 percent red (2.5YR 4/8) clay; strong medium subangular blocky structure; firm; few fine pores; very strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 3. It is loam.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of red, brown, or yellow. Iron depletions are at a depth of 15 to 30 inches.

The lower part of the Bt or Btg horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 1 to 8, or it does not have a dominant matrix hue and has masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. It is clay or silty clay.

Rains Series

The Rains series consists of very deep, poorly drained, moderately permeable soils that formed in loamy marine sediments. These soils are on broad nearly level flats, in oval depressions, and along shallow drainageways in the Southern Coastal Plain Major Land Resource Area. Slopes are less than 1 percent. The soils are classified as fine-loamy, siliceous, thermic Typic Paleaquults.

Rains soils are geographically associated with Coxville, Goldsboro, Lynchburg, Noboco, Norfolk, Ocilla, Ogeechee, and Paxville soils. Coxville soils have more than 35 percent clay in the Btg horizon. Ogeechee soils have a 20 percent decrease in clay content within a depth of 60 inches. Ocilla soils are arenic. Lynchburg, Goldsboro, Noboco, and Norfolk soils do not have a dominant chroma of 2 or less directly below the A or Ap horizon. Paxville soils have an umbric epipedon and have a decrease in clay content of 20 percent or more within a depth of 60 inches.

Typical pedon of Rains sandy loam; 0.6 mile northeast on S.C. Highway 381 from its junction with S.C. Highway 9 in Clio, 2.6 miles east on Carolina Church Road, 0.6 mile south on D.T. Ammons Road, 50 feet east of the road:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/1) sandy loam; weak medium subangular blocky structure; friable; few fine roots; strongly acid; clear wavy boundary.

Btg1—6 to 38 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; friable; few fine roots; few fine pores; few medium distinct gray (10YR 5/1) iron depletions; very strongly acid; gradual wavy boundary.

Btg2—38 to 58 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; few fine roots; common fine pores; common medium distinct brownish yellow (10YR 6/8) and few medium prominent yellowish red (5YR 5/8) masses of iron accumulation; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg3—58 to 65 inches; gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky structure; friable; common fine pores; common medium distinct brown (10YR 5/3) masses of iron accumulation; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is sandy loam.

The Btg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades of brown, yellow, or red. It is sandy loam, sandy clay loam, or clay loam. In some pedons the lower part ranges to sandy clay.

Riverview Series

The Riverview series consists of very deep, well drained, moderately permeable soils that formed in loamy fluvial sediments. These soils are in nearly level areas and on natural levees along flood plains of rivers and large creeks that drain the Southern Piedmont, the Southern Coastal Plain, and the Atlantic Coast Flatwoods Major Land Resource Areas. Slopes range from 0 to 2 percent. The soils are classified as fine-loamy, mixed, thermic Fluventic Dystrochrepts.

Riverview soils are geographically associated with Chastain, Chenneby, Clayham, Tarboro, and Wickham soils. Chenneby and Chastain soils have gray mottles that have chroma of 2 or less within the upper 24 inches of the B horizon. Clayham and Wickham soils have argillic horizons. Tarboro soils are sandy throughout.

Typical pedon of Riverview fine sandy loam, occasionally flooded; 7.7 miles southwest from the junction of U.S. Highway 15 & 401 and Main Street in Bennettsville, 1.2 miles north on Kolbs Tomb Road, 125 feet east of the road:

Ap—0 to 11 inches; brown (10YR 5/3) fine sandy loam; weak fine granular structure; very friable; common fine and medium and few coarse roots; few fine flakes of mica; very strongly acid; clear wavy boundary.

Bw1—11 to 26 inches; yellowish brown (10YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; few medium and few fine pores; many fine flakes of mica; few clean sand grains; very strongly acid; gradual wavy boundary.

Bw2—26 to 36 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; many fine flakes of mica; few clean sand grains; moderately acid; gradual wavy boundary.

C1—36 to 49 inches; brown (7.5YR 5/4) fine sandy loam; few fine roots; common fine pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common fine flakes of mica; very strongly acid; clear wavy boundary.

C2—49 to 72 inches; strong brown (7.5YR 5/6) fine sandy loam; very friable; many fine to coarse flakes of mica; very strongly acid.

The thickness of the solum ranges from 24 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. The content of quartz gravel ranges from 0 to 5 percent in the A and C horizons. Some pedons have few or common concretions.

The A or Ap horizon has hue of 7.5YR to 10YR, value of 4 or 5, and chroma of 3 or 4. It is fine sandy loam.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 8. Masses of iron accumulation in shades of red, yellow, or brown range from none to

common. Iron depletions range from none to common at a depth of 24 inches of more. The horizon is loam, sandy clay loam, or silty clay loam.

The C horizon has hue of 7.5YR or 10YR and value and chroma of 4 to 8. Masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray range from none to common. The horizon is sand, loamy fine sand, sandy loam, or fine sandy loam.

Smithboro Series

The Smithboro series consists of very deep, somewhat poorly drained, moderately slowly permeable soils that formed in clayey marine sediments. These soils are on low broad uplands and on terraces near large streams in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes are less than 1 percent. The soils are classified as clayey, kaolinitic, thermic Aeric Paleaquults.

Smithboro soils are geographically associated with Coxville, Hornsville, Marlboro, McColl, Noboco, Norfolk, and Persanti soils. Coxville and McColl soils have gray horizons directly below the A or Ap horizon. Hornsville and Persanti soils have dominant chroma of more than 2 between the base of the A horizon and a depth of 30 inches. Noboco, Norfolk, and Marlboro soils do not have mottles that have chroma of 2 within a depth of 30 inches.

Typical pedon of Smithboro silt loam; 2.6 miles northeast from the junction of S.C. Highways 38 and 34 in Brownsville, 0.5 mile northwest on an unpaved road, 0.1 mile northwest in a wooded area:

A—0 to 5 inches; dark gray (10YR 4/1) silt loam; weak fine granular structure; friable; common fine, medium, and coarse roots; strongly acid; abrupt wavy boundary.

Bt—5 to 13 inches; light yellowish brown (2.5Y 6/4) clay loam; weak medium subangular blocky structure; friable; common fine and medium and common coarse roots; common medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; few fine faint gray (10YR 6/1) iron depletions; very strongly acid; gradual wavy boundary.

Btg1—13 to 32 inches; gray (10YR 6/1) clay; moderate medium subangular blocky structure; firm; few fine and medium pores; common medium distinct yellowish brown (10YR 5/6) and common medium prominent red (2.5YR 4/8) masses of iron accumulation; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg2—32 to 54 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; common fine and medium roots; few medium pores; common medium prominent red (10YR 4/8), yellowish red (5YR 5/8), and reddish yellow (7.5YR 6/8) masses of iron accumulation; common distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Btg3—54 to 65 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm; few fine roots; few fine pores; common medium prominent yellowish red (5YR 5/8) and common medium prominent reddish yellow (5YR 5/8) masses of iron accumulation; common distinct clay films on faces of peds; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2. It is silt loam.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. In most pedons it has masses of iron accumulation and iron depletions in shades of gray or brown. It is clay loam, silty clay, or clay.

The Btg horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2. In most pedons it has masses of iron accumulation in shades red, yellow, or brown. It is clay loam, silty clay, or clay.

Tarboro Series

The Tarboro series consists of very deep, somewhat excessively drained, very rapidly permeable soils that formed in sandy fluvial sediments. These soils are on natural levees and ridges on the flood plain of the Great Pee Dee River in the Atlantic Coast Flatwoods Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as mixed, thermic Typic Udipsamments.

Tarboro soils are geographically associated with Chastain, Chenneby, Clayham, Riverview, and Wickham soils. These associated soils have a fine-loamy or clayey particle-size control section.

Typical pedon of Tarboro sand, 0 to 4 percent slopes; 6.6 miles southwest on U.S. Highway 15 & 401 from its junction with S.C. Highway 912 southwest of Bennettsville, 1.1 miles southeast on a farm road, 0.4 mile north on a logging road, 50 feet west of the road:

A—0 to 7 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable; common medium and few coarse roots; few fine flakes of mica; moderately acid; clear wavy boundary.

C1—7 to 18 inches; yellowish brown (10YR 5/6) sand; single grained; loose; few medium roots; few fine flakes of mica; strongly acid; clear wavy boundary.

C2—18 to 48 inches; reddish yellow (7.5YR 6/8) sand; single grained; loose; few fine flakes of mica; slightly acid; gradual wavy boundary.

C3—48 to 60 inches; very pale brown (10YR 7/4) sand; single grained; loose; common flakes of mica; slightly acid; gradual wavy boundary.

C4—60 to 80 inches; very pale brown (10YR 7/3) sand; single grained; loose; common fine flakes of mica; moderately acid.

The solum of sandy material is more than 80 inches thick. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. In some pedons the lower part of the C horizon contains as much as 15 percent gravel.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6. It is sand.

The C horizon has hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 3 to 8. It is coarse sand, sand, or loamy sand.

Troup Series

The Troup series consists of very deep, somewhat excessively drained, moderately permeable soils that formed in sandy and loamy marine sediments. These soils are on ridges and side slopes in the Carolina and Georgia Sand Hills and the Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 10 percent. The soils are classified as loamy, siliceous, thermic Grossarenic Kandiudults.

Troup soils are geographically associated with Ailey, Alpin, Blanton, Candor, Bonneau, Emporia, Foxworth, Lucy, Nankin, Noboco, and Uchee soils. Ailey, Bonneau, Lucy, Candor, and Uchee soils have arenic epipedons. Alpin and Foxworth soils do not have an argillic horizon. Blanton soils have a high water table within a depth of 6 feet. Nankin, Noboco, and Emporia soils do not have grossarenic epipedons.

Typical pedon of Troup sand, 0 to 6 percent slopes; 2.9 miles east on New Bridge Road from its junction with S.C. Highway 381 in McColl, 0.3 mile south on Neck Road, 50 feet west of the road:

Ap—0 to 8 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable; few fine roots; moderately acid; abrupt wavy boundary.

E1—8 to 23 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine roots; strongly acid; gradual wavy boundary.

E2—23 to 46 inches; strong brown (7.5YR 5/8) sand; single grained; loose; common clean sand grains; strongly acid; gradual wavy boundary.

E3—46 to 58 inches; reddish yellow (7.5YR 6/8) sand; single grained; loose; common coarse clean sand grains; strongly acid; gradual wavy boundary.

Bt—58 to 80 inches; red (2.5YR 5/8) sandy loam: weak fine subangular blocky structure; friable; few fine roots; few fine pores; strongly acid.

The thickness of the solum is more than 80 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 2 to 4. It is sand.

The E horizon has hue of 5YR to 10YR, value of 4 to 8, and chroma of 3 to 8. It is sand or loamy sand.

The Bt horizon has hue of 10YR to 5YR, value of 4 to 7, and chroma of 4 to 8. It is sandy loam or sandy clay loam.

Uchee Series

The Uchee series consists of very deep, well drained, moderately permeable soils that formed in loamy marine sediments. These soils are on nearly level to moderately sloping ridges and side slopes that are near drainageways in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 10 percent. The soils are classified as loamy, siliceous, thermic Arenic Hapludults.

Uchee soils are geographically associated with Ailey, Bonneau, Blanton, Candor, Emporia, Eunola, Lucy, Noboco, Norfolk, Troup, and Wagram soils. Ailey soils have dense, compact subsoil layers. Blanton and Troup soils are grossarenic. Bonneau, Lucy, and Wagram soils are Paleudults. Candor soils have sandy Bt horizons between depths of 20 and 40 inches. Emporia, Eunola, Noboco, and Norfolk soils do not have arenic epipedons.

Typical pedon of Uchee sand, 0 to 6 percent slopes; 1.4 miles southeast on Adamsville Road from its junction with Old Wire Road, 0.5 mile east on Countryside Road, 150 feet southeast of the road:

Ap—0 to 3 inches; light yellowish brown (10YR 5/4) sand; weak fine granular structure; very friable; few fine roots; few fine pores; neutral; abrupt wavy boundary.

E—3 to 25 inches; very pale brown (10YR 7/3) sand; single grained; loose; few fine roots; strongly acid; clear wavy boundary.

Bt1—25 to 35 inches; brownish yellow (10YR 6/6) sandy clay loam; weak fine and medium subangular blocky structure; friable; few fine and medium roots; few fine and medium pores; few distinct clay films of faces of peds; very strongly acid; gradual wavy boundary.

Bt2—35 to 42 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine pores; common medium prominent red (2.5YR 4/8) masses of iron accumulation; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt3—42 to 47 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; common

medium prominent red (2.5YR 4/8) and common medium distinct gray (10YR 6/1) masses of iron accumulation; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

BC—47 to 57 inches; 35 percent brownish yellow (10YR 6/6), 35 percent red (2.5YR 4/8), and 30 percent gray (10YR 6/1) sandy clay loam; moderate medium subangular blocky and weak medium subangular blocky structure; firm in gray part, friable in red and yellow part; common fine pores; common fine flakes of mica; very strongly acid; gradual wavy boundary.

C—57 to 65 inches; 35 percent yellow (10YR 7/8), 40 percent gray (10YR 6/1), and 25 percent red (2.5YR 4/8) sandy loam; massive; friable in gray part, very friable in red and yellow part; common fine flakes of mica; many clean sand grains; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. The content of gravel ranges from 0 to 15 percent in the A, E, and C horizons.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. It is sand or gravelly sand

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 6. It is sand or gravelly sand.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. In most pedons it has masses of iron accumulation in shades of red or yellow. It is sandy loam or sandy clay loam.

The lower part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8. In most pedons it has masses of iron accumulation and iron depletions in shades of red or gray. It is sandy clay loam, sandy clay, or clay.

The BC and C horizons have hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 4 to 8, or they do not have a dominant matrix hue and have masses of iron accumulation and iron depletions in shades of red, yellow, brown, or gray. They are sandy loam or sandy clay loam. In some pedons the C horizon has streaks or strata of coarser material.

Wagram Series

The Wagram series consists of very deep, well drained, moderately permeable soils that formed in sandy and loamy marine sediments. These soils are on low ridges and side slopes in the Southern Coastal Plain Major Land Resource Area. Slopes range from 0 to 6 percent. The soils are classified as loamy, siliceous, thermic Arenic Kandiudults.

Wagram soils are geographically associated with Ailey, Blanton, Bonneau, Candor, Lucy, Noboco, Norfolk, and Uchee soils. In the subsoil of Ailey and Uchee soils, the clay content decreases by more than 20 percent of the maximum within a depth of 60 inches. Blanton soils are grossarenic. Candor soils are bisequal. Lucy soils have matrix hue of 5YR or redder in the Bt horizon. Bonneau soils have iron depletions between depths of 42 and 60 inches. Noboco and Norfolk soils do not have arenic epipedons.

Typical pedon of Wagram sand, 0 to 6 percent slopes; 6.8 miles north of Bennettsville on S.C. Highway 38 from its junction with S.C. Highway 9, about 1.5 miles west on Sawmill Road, 0.45 mile north on Grant's Mill Road, 69 feet northeast of the road:

Ap—0 to 7 inches; grayish brown (10YR 5/2) sand; weak fine subangular blocky structure; very friable; few very fine and fine pores; few decayed coarse roots; few clean sand grains; slightly acid; abrupt wavy boundary.

E—7 to 30 inches; very pale brown (10YR 7/3) sand; single grained; very friable; few clean sand grains; few pockets of material from A horizon; slightly acid; gradual wavy boundary.

Bt1—30 to 54 inches; reddish yellow (7.5YR 6/8) sandy clay loam; weak medium subangular blocky structure; friable; few very fine pores; sand grains coated and bridged with clay; few clean sand grains; strongly acid; gradual wavy boundary.

Bt2—54 to 72 inches; strong brown (7.5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few medium distinct yellow (10YR 7/8) and yellowish red (5YR 5/8) masses of iron accumulation; few distinct clay films on faces of peds; common clean sand grains; strongly acid.

The thickness of the solum is more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed.

The A or Ap horizon has hue of 10YR, value of 5, and chroma of 2 to 4. It is sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. In most pedons it has masses of iron accumulation in shades of red or yellow in the lower part. Iron depletions are below a depth of 60 inches.

Wickham Series

The Wickham series consists of very deep, well drained, moderately permeable soils that formed in loamy fluvial and marine sediments. These soils are on stream terraces adjacent to the Great Pee Dee River flood plain and along stream terraces of large creeks in the Atlantic Coast Flatwoods and Southern Coastal Plain Major Land Resource Areas. Slopes range from 0 to 6 percent. The soils are classified as fine-loamy, mixed, thermic Typic Hapludults.

Wickham soils are geographically associated with Chastain, Chenneby, Chewacla, Clayham, Hornsville, Riverview, Smithboro, and Tarboro soils. Hornsville soils are clayey. Chenneby, Chewacla, Chastain, and Smithboro soils have mottles that have chroma of 2 within the upper 24 inches of the B horizon. Clayham soils do not have a fine particle-size control section. Riverview soils do not have argillic horizons. Tarboro soils are sandy throughout.

Typical pedon of Wickham fine sandy loam, 0 to 2 percent slopes; 2.8 miles south on Screwpin Road from its junction with Drake Road in Drake, 200 feet west of the road:

Ap—0 to 8 inches; yellowish red (5YR 4/6) sandy loam; weak fine subangular blocky structure; very friable; common fine roots; common fine flakes of mica; neutral; clear wavy boundary.

Bt1—8 to 14 inches; red (5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; common fine roots; few fine pores; common fine flakes of mica; very few distinct clay films on faces of peds and in root channels; slightly acid; gradual wavy boundary.

Bt2—14 to 40 inches; red (5YR 4/8) clay loam; moderate medium subangular blocky structure; friable; common fine pores; common fine flakes of mica; very few distinct clay films on faces of peds; slightly acid; gradual wavy boundary.

Bt3—40 to 52 inches; red (2.5YR 4/8) clay loam; weak medium subangular blocky structure; friable; few fine pores; common fine flakes of mica; very few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

BC—52 to 62 inches; yellowish red (5YR 5/6) fine sandy loam; weak medium subangular blocky structure; friable; common fine flakes of mica; very strongly acid, gradual wavy boundary.

C—62 to 72 inches; reddish yellow (7.5YR 6/8) sandy loam; massive; very friable; many fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout the profile, except where the surface layer has been limed. The content of gravel and cobbles ranges from 0 to 15 percent in the A horizon, from 0 to 5 percent in the Bt horizon, and from 0 to 15 percent in the C horizon.

The A or Ap horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 to 8. It is sandy loam.

The Bt horizon has hue of 2.5YR or 7.5YR, value of 4 or 5, and chroma of 4 to 8. It is sandy clay loam or clay loam.

The BC horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 to 8. It sandy loam or fine sandy loam.

The C horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 8. It is loamy sand or sandy loam, or it is stratified in sandy to loamy textures.

Formation of the Soils

This section describes the factors of soil formation and relates them to the soils in the survey area. It also discusses the processes of horizon differentiation.

Factors of Soil Formation

Soil forms through processes that act on accumulated or deposited geologic material. The five factors of soil formation are parent material, climate, living organisms, relief, and time. Each of the soil-forming factors affects and is affected by the other factors.

Climate and living organisms are the active factors in soil formation. Their effect on the parent material is modified by relief and by the length of time that the parent material has been in place. The relative importance of each soil-forming factor differs from place to place. In some places one factor dominates soil formation and determines most of the soil properties. In most areas, however, the interaction of all five factors determines the kind of soil that forms.

Parent Material

Parent material is the unconsolidated mass in which a soil forms. It largely determines the mineral and chemical composition of the soil. The soils in Marlboro County formed in material weathered from rock and in sediments that were deposited by the ocean, by streams, or successively by both.

Residual material forms in place through the weathering of underlying rock. Soils that formed in this material make up a small percentage the survey area. Badin soils are an example.

Most of the soils in Marlboro County formed in marine sediments that were deposited when the ocean receded eastward. Most of the material in the Sand Hills and on the Coastal Plain was deposited during this period. The material typically consists of quartz sand and gravel of varying sizes interbedded with strata of kaolin clay. Ailey, Alpin, Candor, Coxville, Emporia, Noboco, Pelion, and Cowarts soils formed in marine sediments.

About 10 percent of the soils in the county formed in alluvial sediments on flood plains and river terraces. In some areas this alluvium has been moved by the action of streams and the ocean. The Great Pee Dee River has deposited Piedmont material on the adjacent flood plain and river terraces. The soils in these areas are generally younger than other soils in the county. Some soils on the flood plains are only a few hundred years old. Chenneby, Chastain, Johnston, and Riverview soils formed in alluvial sediments.

Climate

Climate, particularity precipitation and temperature, affect the physical, chemical, and biological relationships in the soil. Water dissolves minerals, aids chemical and biological activity, and transports the dissolved mineral and organic material through the soil profile. High levels of annual rainfall promote the leaching of soluble bases and

the translocation of the less soluble and colloidal material downward through the soil. A long frost-free season and heavy rainfall result in the downward movement of the fine textured soil material and the loss of plant nutrients. The amount of water that percolates through the soil depends on the amount of rainfall, the relative humidity, and the length of the frost-free period. Percolation, or the downward movement of water, also is affected by relief and the permeability of the soil material.

Weathering of the parent material is accelerated by moist conditions and warm temperatures. The growth and activity of living organisms also are increased by a warm, humid climate.

Living Organisms

The number and kinds of plants and animals that live in and on the soil are determined mainly by the climate and, to a lesser extent, by the parent material, relief, and age of the soil.

Bacteria, fungi, and other micro-organisms are important in soil formation. They accelerate the weathering of minerals and the decomposition of organic matter. The larger plants alter the soil microclimate, provide organic matter, and transfer chemical elements from the subsoil to the surface layer. Earthworms and other small invertebrates are active mainly in the A horizon and the upper part of the B horizon, where they slowly but continuously mix the soil material. Bacteria and fungi decompose organic matter and release nutrients for plant use. Other animals also affect soil formation by eating plants and returning plant material to the soil.

The native vegetation of Marlboro County is mainly loblolly pine, longleaf pine, oak, and hickory in the uplands and sweetgum, blackgum, yellow-poplar, baldcypress, maple, tupelo, and water oak on the flood plains. Large trees affect soil formation in various ways. Trees bring nutrients from deep in the soil to the upper layers, soil material from varying depths is brought to the surface when a tree is blown over, and decaying large roots provide large openings that can be filled with soil material.

Relief

Relief, or lay of the land, influences soil formation through its effect on moisture, temperature, and erosion. Its influence, however, is modified somewhat by the other soil-forming factors.

Slopes in the county range from 0 to 25 percent. Most of the upland soils that have slopes of less than 25 percent have a thick, well developed profile. Some soils that have slopes ranging from 2 to 25 percent have a thinner, less developed profile. The most extensive soils in the county are gently sloping or sloping and have been affected by relief. The soils on the flood plains have slopes that range from 0 to 2 percent. These soils are young and show little evidence of profile development.

Time

The length of time required for a soil to develop depends largely on the intensity of the soil-forming factors. The soils in Marlboro County range from young, or immature, soils, which show very little evidence of profile development, to mature soils that have well defined horizons.

The soils on the smoother parts of the uplands, such as Noboco soils, generally are well developed. The soils on the steeper slopes, where geologic erosion has removed the soil material to some extent, tend to be thinner. Badin and Cowarts soils are examples. The soils on the flood plains along streams are young because the material has not been in place long enough for distinct horizons to form. Chenneby soils are an example.

Processes of Horizon Differentiation

If a vertical cut is dug into a soil, several layers or horizons are evident. Many soil-forming processes have produced this differentiation of horizons. These processes include the accumulation of organic matter, the leaching of soluble salts, the reduction and translocation of iron, the formation of soil structure, physical weathering such as through freezing and thawing, and the chemical weathering of primary minerals or rocks. Some of these processes take place continuously in all soils, but the number of active processes and the degree of their activity vary from one soil to another.

Most soils in Marlboro County exhibit four major horizons: the A, E, B, and C horizons. These horizons can be subdivided to indicate variations within a horizon. An example is a Bt horizon, which is a subsoil layer that contains translocated clay from the A horizon.

The A horizon is the surface layer. It has the largest accumulation of organic matter of all horizons. If the soil has been cleared and plowed, this layer is called the Ap horizon. Byars and Johnston soils are examples of soils that have a distinctive dark A or Ap horizon.

The E horizon is the zone of maximum leaching, or eluviation, of clay and iron. It forms directly below the surface layer and generally is the lightest colored horizon in the soil. Ailey and Blanton soils have a well expressed E horizon.

The B horizon is underlies the A or E horizon. It commonly is called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, and other compounds. Noboco and Emporia soils have well expressed B horizons. Some soils, such as Cowarts soils, have a thin Bt horizon that is dense and brittle in parts. This horizon has a very low content of organic matter. It tends to be cemented and is very hard when dry and slightly brittle when moist. It generally is mottled and is moderately slowly permeable or slowly permeable.

The C horizon is generally below the B horizon. It includes sediments, saprolite, and consolidated bedrock and, when moist, can be dug with a spade. Badin soils formed in saprolite and consolidated bedrock that can be dug with a spade. Johnston soils do not have a B horizon. In these soils the C horizon is directly below the A horizon.

Excessively drained soils, such as Alpin soils, generally are brownish and yellowish and generally do not have gray mottles or mottles that have chroma of 2 or less. They are porous and generally are sandy. Well drained soils, such as Noboco soils, have a yellowish and brownish subsoil. These colors are the result of a thin coating of iron oxide on the sand, silt, and clay particles. A soil is considered well drained if it does not have gray mottles or mottles that have chroma of 2 or less within a depth of 30 inches. Moderately well drained soils, such as Goldsboro soils, generally do not have gray mottles within a depth of about 15 to 20 inches. Somewhat poorly drained soils, such as Chewacla soils, have gray mottles near the A horizon. Poorly drained soils, such as Coxville soils, generally are dominantly gray in the B horizon and commonly are mottled.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces. Generally, cool aspects are north- to east-facing and warm aspects are south- to west-facing.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Carolina bay. A shallow, oval depression that does not have a natural drainage outlet. These bays are oriented in a northwest-southwest direction and range from 5

acres to more than 500 acres in size. Most contain standing water unless they are drained.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.
Cropping system. Growing crops according to a planned system of rotation and management practices.
Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.
Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.
Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.
Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.
Depth to rock (in tables). Bedrock is too near the surface for the specified use.
Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.
Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”
Drainage, surface. Runoff, or surface flow of water, from an area.
Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.
Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.
Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.
Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.
Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.
Fast intake (in tables). The rapid movement of water into the soil.
Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A very small channel with steep sides cut by running water and through which water ordinarily runs only after rainfall, icemelt, or snowmelt. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage. Areas identified on the detailed soil maps by a special symbol typically are less than 2 acres in size.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above the surrounding lowlands, commonly of limited summit area and having a well defined

outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A horizon to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones that have a low content of iron and manganese oxide because of chemical reduction and removal but also have a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation include:

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If

formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay and quartz and other diluents. It commonly appears as red mottles, usually in platy,

polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is also exposed to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate weather conditions and soil moisture conditions and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. They indicate chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. They indicate the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation. Descriptive terms for concentrations and depletions are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Skeletans. Coatings of light-colored, low-luster silica flour or silica dust adhering to the natural surfaces in soil materials.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 6 percent
Moderately sloping	6 to 10 percent
Strongly sloping	10 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 50 percent
Very steep	50 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of rock fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from soil blowing and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and to divert water off and away from the road surface. Water bars can be easily driven over if they are constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1961-90 at McColl, South Carolina)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	54.2	32.0	43.1	76	9	46	3.77	1.99	5.33	6	0.9
February----	58.3	34.6	46.5	79	14	69	3.69	1.82	5.30	5	1.0
March-------	67.1	42.1	54.6	87	21	195	4.11	2.19	5.80	7	.4
April-------	76.1	49.5	62.8	92	29	383	2.49	.91	3.81	4	.0
May---------	82.8	58.3	70.6	95	40	637	3.66	1.96	5.16	6	.0
June--------	88.7	65.9	77.3	100	51	815	4.36	2.18	6.26	6	.0
July--------	90.7	69.0	79.9	101	57	925	4.89	1.93	7.39	7	.0
August------	89.4	68.3	78.8	99	56	890	4.30	2.43	5.96	6	.0
September---	84.7	62.9	73.8	96	45	705	3.47	1.76	5.19	4	.0
October-----	75.5	50.6	63.1	90	29	404	2.76	.79	4.36	3	.0
November----	66.6	42.2	54.4	84	21	182	2.63	1.15	3.89	4	.0
December----	57.5	34.8	46.2	77	14	72	3.05	1.41	4.64	5	.3
Yearly:											
Average---	74.3	50.9	62.6	---	---	---	---	---	---	---	---
Extreme---	107	-5	---	102	7	---	---	---	---	---	---
Total-----	---	---	---	---	---	5,323	43.19	32.48	51.20	63	2.6

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at McColl, South Carolina)

Probability	Temperature: 24 °F or lower	Temperature: 28 °F or lower	Temperature: 32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Mar. 18	Apr. 5	Apr. 14
2 years in 10 later than--	Mar. 10	Mar. 28	Apr. 9
5 years in 10 later than--	Feb. 26	Mar. 14	Mar. 29
First freezing temperature in fall:			
1 year in 10 earlier than--	Nov. 4	Oct. 25	Oct. 14
2 years in 10 earlier than--	Nov. 13	Nov. 1	Oct. 20
5 years in 10 earlier than--	Nov. 30	Nov. 13	Oct. 31

Table 3.—Growing Season

(Recorded in the period 1961-90 at McColl, South Carolina)

Probability	Daily minimum temperature during growing season: Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	242	213	193
8 years in 10	254	223	201
5 years in 10	276	242	216
2 years in 10	298	261	230
1 year in 10	310	270	238

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AaB	Ailey sand, moderately wet, 0 to 6 percent slopes	7,324	2.4
AeC	Ailey loamy sand, 6 to 10 percent slopes	3,816	1.2
AeD	Ailey loamy sand, 10 to 15 percent slopes	382	0.1
AgD	Ailey gravelly loamy sand, 6 to 15 percent slopes	649	0.2
AgE	Ailey gravelly loamy sand, 15 to 25 percent slopes	216	0.1
AhB	Alaga sand, 0 to 6 percent slopes	908	0.3
ApB	Alpin sand, 0 to 6 percent slopes	7,007	2.3
ApC	Alpin sand, 6 to 10 percent slopes	952	0.3
AuB	Autryville sand, 0 to 6 percent slopes	4,051	1.3
BaD	Badin silt loam, 2 to 15 percent slopes	95	*
BaF	Badin silt loam, 15 to 40 percent slopes	384	0.1
BnB	Blanton sand, 0 to 6 percent slopes	3,722	1.2
BnC	Blanton sand, 6 to 10 percent slopes	1,231	0.4
BoB	Bonneau sand, 0 to 4 percent slopes	7,070	2.3
By	Byars loam	1,595	0.5
CaB	Candor sand, 0 to 6 percent slopes	4,361	1.4
CaC	Candor sand, 6 to 10 percent slopes	851	0.3
CaD	Candor sand, 10 to 15 percent slopes	408	0.1
CdB	Candor sand, moderately wet, 0 to 6 percent slopes	2,831	0.9
Ce	Chastain-Chenneby complex, frequently flooded	20,988	6.8
Ch	Chenneby silt loam, occasionally flooded	9,105	2.9
CkA	Chewacla loam, 0 to 2 percent slopes, frequently flooded	174	*
CmA	Clayham loam, 0 to 2 percent slopes	2,011	0.6
CmB	Clayham loam, 2 to 6 percent slopes	1,212	0.4
CnB2	Clayham clay loam, 2 to 6 percent slopes, eroded	856	0.3
CoC	Cowarts loamy sand, 6 to 10 percent slopes	1,844	0.6
CoD	Cowarts loamy sand, 10 to 15 percent slopes	872	0.3
CwC	Cowarts gravelly loamy sand, 6 to 10 percent slopes	659	0.2
CwD	Cowarts gravelly loamy sand, 10 to 15 percent slopes	2,638	0.8
CwE	Cowarts gravelly loamy sand, 15 to 25 percent slopes	1,414	0.5
Cx	Coxville loam	34,176	11.0
EmA	Emporia loamy sand, 0 to 2 percent slopes	970	0.3
EmB	Emporia loamy sand, 2 to 6 percent slopes	11,166	3.6
EmB2	Emporia sandy loam, 2 to 6 percent slopes, eroded	1,648	0.5
EuA	Eunola loamy sand, 0 to 2 percent slopes	2,040	0.7
FaA	Faceville loamy sand, 0 to 2 percent slopes	3,551	1.1
FaB	Faceville loamy sand, 2 to 6 percent slopes	1,458	0.5
FaB2	Faceville sandy clay loam, 2 to 6 percent slopes, eroded	1,314	0.4
FxB	Foxworth sand, 0 to 6 percent slopes	1,810	0.6
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	5,374	1.7
HnA	Hornsville loam, 0 to 2 percent slopes	3,821	1.2
HnB	Hornsville loam, 2 to 6 percent slopes	2,125	0.7
HnB2	Hornsville sandy clay loam, 2 to 6 percent slopes, eroded	2,125	0.7
Jo	Johnston mucky loam, frequently flooded	1,854	0.6
Kn	Kinston loam, frequently flooded	10,456	3.4
Le	Leon sand	363	0.1
LuB	Lucy sand, 0 to 6 percent slopes	1,436	0.5
Ly	Lynchburg sandy loam	1,403	0.5
MaA	Marlboro fine sandy loam, moderately wet, 0 to 2 percent slopes	751	0.2
MaB	Marlboro fine sandy loam, moderately wet, 2 to 6 percent slopes	1,561	0.5
Mc	McColl loam	651	0.2
NaB	Nankin loamy fine sand, 2 to 6 percent slopes	918	0.3
NbB2	Nankin sandy clay loam, 2 to 6 percent slopes, eroded	2,382	0.8
NbC2	Nankin sandy clay loam, 6 to 10 percent slopes, eroded	120	*
NcA	Noboco loamy sand, 0 to 2 percent slopes	15,959	5.2
NcB	Noboco loamy sand, 2 to 6 percent slopes	6,340	2.0
NcB2	Noboco sandy loam, 2 to 6 percent slopes, eroded	701	0.2
NoA	Norfolk loamy sand, 0 to 2 percent slopes	13,493	4.3
NoB	Norfolk loamy sand, 2 to 6 percent slopes	8,734	2.8
NrB2	Norfolk sandy clay loam, 2 to 6 percent slopes, eroded	51	*

See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
OcB	Ocilla sand, 0 to 4 percent slopes	991	0.3
Og	Ogeechee sandy loam	4,259	1.4
OrA	Orangeburg loamy sand, 0 to 2 percent slopes	545	0.2
Pa	Pamlico muck, frequently flooded	10,255	3.3
Pe	Paxville fine sandy loam	1,108	0.4
PnA	Pelion loamy sand, 0 to 2 percent slopes	787	0.3
PnB	Pelion loamy sand, 2 to 6 percent slopes	2,114	0.7
PrA	Persanti loam, 0 to 2 percent slopes	12,099	3.9
Qz	Quartzipsamments, sloping	1,157	0.4
Ra	Rains sandy loam	6,055	2.0
Rv	Riverview fine sandy loam, occasionally flooded	6,162	2.0
Sm	Smithboro silt loam	18,094	5.8
TbB	Tarboro sand, 0 to 4 percent slopes	1,238	0.4
TrB	Troup sand, 0 to 6 percent slopes	1,272	0.4
TrC	Troup sand, 6 to 10 percent slopes	152	*
UgB	Uchee sand, 0 to 6 percent slopes	4,543	1.5
UgC	Uchee sand, 6 to 10 percent slopes	1,031	0.3
UhB	Uchee gravelly sand, 0 to 6 percent slopes	749	0.2
UhC	Uchee gravelly sand, 6 to 10 percent slopes	952	0.3
Ur	Udorthents	3,120	1.0
WaB	Wagram sand, 0 to 6 percent slopes	1,354	0.4
WkA	Wickham fine sandy loam, 0 to 2 percent slopes	790	0.3
W	Water	3,260	1.1
	Total	310,464	100.0

* Less than 0.1 percent.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
AaB------------- Ailey	IIIs	50	20	---	400	---	6.0	6.0
AeC, AeD-------- Ailey	VIs	---	---	---	---	---	5.0	5.0
AgD, AgE-------- Ailey	VIs	---	---	---	---	---	5.0	5.0
AhB------------- Alaga	IVs	55	---	---	---	---	7.0	7.5
ApB------------- Alpin	IVs	---	---	1,500	---	---	7.0	8.0
ApC------------- Alpin	VIs	---	---	---	---	---	7.0	8.0
AuB------------- Autryville	IIs	75	25	2,200	600	---	8.0	9.0
BaD------------- Badin	IVe	75	20	---	---	35	---	---
BaF------------- Badin	VIIe	---	---	---	---	---	---	---
BnB------------- Blanton	IIIs	60	25	2,000	---	---	6.5	8.0
BnC------------- Blanton	IVs	50	20	1,700	---	---	6.5	7.5
BoB------------- Bonneau	IIs	85	30	2,600	700	---	8.0	8.5
By-------------- Byars	VIw	80	40	---	---	---	12.0	---
CaB------------- Candor	IIIs	45	20	1,700	---	---	---	6.0
CaC, CaD-------- Candor	IVs	40	15	1,300	---	---	---	6.0
CdB------------- Candor	IIIs	45	20	1,700	---	---	---	6.0
Ce-------------- Chastain-Chenneby	VIIw	---	---	---	---	---	---	---
Ch-------------- Chenneby	IIw	90	35	---	700	---	---	10.0

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
CkA------------- Chewacla	IVw	80	30	---	700	---	6.0	---
CmA------------- Clayham	I	125	40	2,800	800	---	9.0	8.0
CmB------------- Clayham	IIe	115	38	2,600	750	---	9.0	8.0
CnB2------------ Clayham	IIe	125	40	2,800	650	---	9.0	8.0
CoC, CoD-------- Cowarts	VIe	---	---	---	---	---	---	6.5
CwC, CwD-------- Cowarts	IVe	---	---	---	---	---	---	7.0
CwE------------- Cowarts	VIIe	---	---	---	---	---	---	6.0
Cx-------------- Coxville	IIIw	110	40	---	---	50	9.0	---
EmA------------- Emporia	I	110	35	3,000	650	55	7.0	---
EmB, EmB2------- Emporia	IIe	100	30	2,900	600	50	6.0	---
EuA------------- Eunola	IIw	100	35	---	600	---	9.0	---
FaA------------- Faceville	I	115	45	---	875	---	7.0	10.0
FaB------------- Faceville	IIe	115	45	---	800	---	7.0	10.0
FaB2------------ Faceville	IIIe	90	35	---	750	---	6.0	8.0
FxB------------- Foxworth	IIIs	---	---	---	---	---	7.5	---
GoA------------- Goldsboro	IIw	125	42	3,000	700	60	9.0	---
HnA------------- Hornsville	IIw	100	40	---	600	---	9.0	12.0
HnB------------- Hornsville	IIe	90	35	---	550	---	8.5	11.0
HnB2------------ Hornsville	IIIe	70	35	---	500	---	8.5	11.0
Jo-------------- Johnston	VIIw	---	---	---	---	---	---	---

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
Kn-------------- Kinston	VIw	---	---	---	---	---	---	---
Le-------------- Leon	IVw	50	---	---	---	---	7.5	9.0
LuB------------- Lucy	IIs	80	33	---	500	---	8.5	8.0
Ly-------------- Lynchburg	IIw	115	45	2,800	675	---	10.0	---
MaA------------- Marlboro	I	100	40	2,500	1,000	---	---	10.0
MaB------------- Marlboro	IIe	100	40	2,400	1,000	---	---	10.0
Mc-------------- McColl	IIIw	90	35	---	---	---	---	---
NaB------------- Nankin	IIe	75	30	2,200	600	---	7.0	9.0
NbB2------------ Nankin	IIIe	60	20	2,000	550	---	6.0	7.0
NbC2------------ Nankin	IVe	50	20	1,600	---	---	6.0	6.0
NcA------------- Noboco	I	115	45	3,000	700	60	---	11.5
NcB, NcB2------- Noboco	IIe	110	40	2,900	700	55	---	11.5
NoA------------- Norfolk	I	110	40	3,000	700	60	---	10.5
NoB, NrB2------- Norfolk	IIe	100	35	2,900	650	55	---	10.0
OcB------------- Ocilla	IIIw	75	35	2,600	---	---	7.5	8.5
Og-------------- Ogeechee	IIIw	100	45	---	---	---	9.0	---
OrA------------- Orangeburg	I	120	45	2,400	900	---	8.5	10.5
Pa-------------- Pamlico	VIIw	---	---	---	---	---	---	---
Pe-------------- Paxville	VIw	---	---	---	---	---	---	---
PnA------------- Pelion	IIw	70	30	---	550	---	8.0	8.0

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Soil name and map symbol	Land capability	Corn	Soybeans	Tobacco	Cotton	Wheat	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Lbs	Bu	AUM*	AUM*
PnB------------- Pelion	IIe	60	25	---	500	---	7.0	8.0
PrA------------- Persanti	IIw	100	40	2,400	700	---	8.0	9.0
Qz-------------- Quartzipsam- ments	VIs	---	---	---	---	---	5.5	6.0
Ra-------------- Rains	IIIw	110	40	2,300	450	---	10.0	---
Rv-------------- Riverview	IIw	80	30	---	---	---	7.0	8.0
Sm-------------- Smithboro	IIIw	90	40	---	---	---	9.0	---
TbB------------- Tarboro	IIIs	50	20	---	---	---	---	---
TrB------------- Troup	IIIs	60	25	---	400	---	7.2	7.5
TrC------------- Troup	VIs	---	---	---	---	---	5.0	6.5
UgB------------- Uchee	IIs	70	30	---	550	---	8.5	8.5
UgC------------- Uchee	IIIs	65	25	---	500	---	8.5	8.0
UhB------------- Uchee	IIs	70	30	---	550	---	8.5	8.5
UhC------------- Uchee	IIIs	65	25	---	500	---	8.5	8.0
Ur-------------- Udorthents	IVe	---	---	---	---	---	---	---
WaB------------- Wagram	IIs	75	25	2,400	550	40	---	8.0
WkA------------- Wickham	I	125	42	2,800	800	---	9.0	9.0

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
CmA	Clayham loam, 0 to 2 percent slopes
CmB	Clayham loam, 2 to 6 percent slopes
EmA	Emporia loamy sand, 0 to 2 percent slopes
EmB	Emporia loamy sand, 2 to 6 percent slopes
EuA	Eunola loamy sand, 0 to 2 percent slopes
FaA	Faceville loamy sand, 0 to 2 percent slopes
FaB	Faceville loamy sand, 2 to 6 percent slopes
GoA	Goldsboro loamy sand, 0 to 2 percent slopes
HnA	Hornsville loam, 0 to 2 percent slopes
HnB	Hornsville loam, 2 to 6 percent slopes
Ly	Lynchburg sandy loam (where protected from flooding or not frequently flooded during the growing season)
MaA	Marlboro fine sandy loam, moderately wet, 0 to 2 percent slopes
MaB	Marlboro fine sandy loam, moderately wet, 2 to 6 percent slopes
NcA	Noboco loamy sand, 0 to 2 percent slopes
NcB	Noboco loamy sand, 2 to 6 percent slopes
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
PrA	Persanti loam, 0 to 2 percent slopes
Rv	Riverview fine sandy loam, occasionally flooded
WkA	Wickham fine sandy loam, 0 to 2 percent slopes

Table 7.—Woodland Management and Productivity

(Absence of an entry indicates that information was not available)

Soil name and map symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
AaB, AeC, AeD------ Ailey	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine-------	60	4	Longleaf pine.
AgD, AgE----------- Ailey	Slight	Moderate	Moderate	Moderate	Slight	Longleaf pine-------	58	4	Longleaf pine.
AhB---------------- Alaga	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	80	8	Loblolly pine.
						Longleaf pine-------	70	6	
ApB, ApC----------- Alpin	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	85	8	Loblolly pine.
						Longleaf pine-------	70	6	
						Turkey oak----------	---	---	
						Post oak------------	---	---	
						Blackjack oak-------	---	---	
						Bluejack oak--------	---	---	
AuB---------------- Autryville	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	77	7	Loblolly pine, longleaf pine.
						Longleaf pine-------	60	4	
						Southern red oak----	---	---	
						Hickory-------------	---	---	
						Sweetgum------------	---	---	
						Red maple-----------	---	---	
						White oak-----------	---	---	
BaD---------------- Badin	Slight	Slight	Slight	Moderate	Moderate	Loblolly pine-------	80	8	Loblolly pine, shortleaf pine.
						Shortleaf pine------	68	7	
						Virginia pine-------	---	---	
						Yellow-poplar-------	---	---	
						White oak-----------	63	3	
						Scarlet oak---------	65	3	
						Chestnut oak--------	66	3	
BaF---------------- Badin	Moderate	Moderate	Slight	Moderate	Moderate	Loblolly pine-------	80	8	Loblolly pine, shortleaf pine.
						Shortleaf pine------	68	7	
						Virginia pine-------	---	---	
						Yellow-poplar-------	---	---	
						White oak-----------	63	3	
						Scarlet oak---------	65	3	
						Chestnut oak--------	66	3	
BnB, BnC----------- Blanton	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	85	8	Loblolly pine, longleaf pine.
						Longleaf pine-------	70	6	
						Bluejack oak--------	---	---	
						Turkey oak----------	---	---	
						Southern red oak----	---	---	
						Live oak------------	---	---	
BoB---------------- Bonneau	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	95	10	Loblolly pine, longleaf pine.
						Longleaf pine-------	75	6	
						White oak-----------	---	---	
						Hickory-------------	---	---	
By----------------- Byars	Slight	Severe	Severe	Moderate	Severe	Loblolly pine-------	95	10	Loblolly pine, American sycamore.
						Sweetgum------------	90	7	
						Water tupelo--------	90	10	
						Water oak-----------	90	6	

See footnotes at end of table.

Table 7.—Woodland Management and Productivity—Continued

Soil name and map symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
CaB, CaC, CaD, CdB Candor	Slight	Moderate	Moderate	Slight	Slight	Longleaf pine	58	4	Longleaf pine, loblolly pine.
						Loblolly pine	---	---	
						Turkey oak	---	---	
						Blackjack oak	---	---	
						Post oak	---	---	
Ce**:									
Chastain	Slight	Severe	Severe	Severe	Severe	Sweetgum	95	8	Sweetgum.
						Baldcypress	---	---	
						Water tupelo	---	---	
						Water oak	---	---	
Chenneby	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine	100	11	Loblolly pine, yellow-poplar, sweetgum, water oak, American sycamore.
						Sweetgum	100	10	
						Water oak	100	7	
						Yellow-poplar	100	9	
						American sycamore	100	11	
Ch Chenneby	Slight	Moderate	Moderate	Slight	Severe	Loblolly pine	100	11	Loblolly pine, yellow-poplar, sweetgum, water oak, American sycamore.
						Sweetgum	100	10	
						Water oak	100	7	
						Yellow-poplar	100	9	
						American sycamore	100	11	
CkA Chewacla	Slight	Moderate	Slight	Moderate	Severe	Yellow-poplar	95	7	Yellow-poplar, loblolly pine, sweetgum, American sycamore.
						Loblolly pine	95	10	
						Sweetgum	97	9	
						Water oak	80	5	
CmA, CmB, CnB2 Clayham	Slight	Moderate	Slight	Slight	Severe	Loblolly pine	90	9	Loblolly pine.
						White oak	---	---	
						Sweetgum	---	---	
						Hickory	---	---	
						Red maple	---	---	
CoC, CoD Cowarts	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	80	8	Loblolly pine, longleaf pine.
						Longleaf pine	70	6	
CwC, CwD Cowarts	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	86	9	Loblolly pine, longleaf pine.
						Longleaf pine	67	5	
CwE Cowarts	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine	80	8	Loblolly pine, longleaf pine.
						Longleaf pine	70	6	
Cx Coxville	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine	91	9	Loblolly pine, sweetgum.
						Longleaf pine	77	7	
						Sweetgum	84	6	
						Yellow-poplar	86	6	
						Southern red oak	87	5	
						Water oak	75	5	
						Willow oak	88	6	
EmA, EmB Emporia	Slight	Slight	Moderate	Slight	Moderate	Loblolly pine	75	7	Loblolly pine, sweetgum.
						Southern red oak	70	4	

See footnotes at end of table.

Table 7.—Woodland Management and Productivity—Continued

Soil name and map symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
EmB2: Emporia	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	75	7	Loblolly pine, sweetgum.
						Southern red oak	70	4	
EuA: Eunola	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine	95	10	Loblolly pine, sweetgum, yellow-poplar.
						Sweetgum	95	8	
						Yellow-poplar	95	7	
FaA, FaB, FaB2: Faceville	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	82	8	Loblolly pine.
						Longleaf pine	65	5	
FxB: Foxworth	Slight	Moderate	Moderate	Slight	Moderate	Slash pine	80	10	Loblolly pine.
						Longleaf pine	65	5	
						Turkey oak	---	---	
						Live oak	---	---	
						Post oak	---	---	
						Bluejack oak	---	---	
						Laurel oak	---	---	
GoA: Goldsboro	Slight	Slight	Slight	Slight	Moderate	Loblolly pine	90	9	Loblolly pine.
						Longleaf pine	73	6	
						Sweetgum	---	---	
						Southern red oak	---	---	
						White oak	---	---	
						Water oak	---	---	
						Yellow-poplar	---	---	
						Red maple	---	---	
HnA, HnB, HnB2: Hornsville	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	90	9	Loblolly pine, sweetgum, yellow-poplar.
						Sweetgum	90	7	
Jo: Johnston	Slight	Severe	Severe	Severe	Severe	Yellow-poplar	94	7	Green ash, loblolly pine, sweetgum, baldcypress.
						Loblolly pine	106	12	
						Sweetgum	94	8	
						Water oak	103	7	
						Water tupelo	---	---	
						Swamp tupelo	---	---	
						Baldcypress	---	---	
Kn: Kinston	Slight	Severe	Severe	--------	--------	Loblolly pine	100	9	Loblolly pine, American sycamore, yellow-poplar, eastern cottonwood, cherrybark oak, green ash, sweetgum.
						Sweetgum	95	8	
						White oak	90	4	
						Eastern cottonwood	100	---	
						Cherrybark oak	95	4	
Le: Leon	Slight	Moderate	Moderate	Slight	Moderate	Longleaf pine	70	6	Loblolly pine.
						Loblolly pine	75	7	
LuB: Lucy	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	80	8	Longleaf pine, loblolly pine.
						Longleaf pine	70	6	

See footnotes at end of table.

Table 7.—Woodland Management and Productivity—Continued

Soil name and map symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
Ly----------------- Lynchburg	Slight	Moderate	Slight	Slight	Severe	Loblolly pine-------	86	9	Loblolly pine, American sycamore, sweetgum.
						Longleaf pine-------	74	6	
						Yellow-poplar-------	92	6	
						Sweetgum------------	90	7	
						Southern red oak----	---	---	
						White oak-----------	---	---	
						Blackgum------------	---	---	
MaA, MaB----------- Marlboro	Slight	Slight	Slight	Slight	Slight	Loblolly pine-------	82	8	Loblolly pine.
						Longleaf pine-------	62	4	
Mc----------------- McColl	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine-------	87	9	Loblolly pine, sweetgum, American sycamore.
						Pond pine-----------	70	---	
NaB, NbB2, NbC2---- Nankin	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	80	8	Loblolly pine.
						Longleaf pine-------	70	6	
NcA, NcB, NcB2----- Noboco	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	90	9	Loblolly pine, American sycamore, sweetgum.
						Longleaf pine-------	80	7	
						Southern red oak----	---	---	
						Sweetgum------------	---	---	
NoA, NoB, NrB2----- Norfolk	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	84	8	Loblolly pine.
						Longleaf pine-------	77	7	
						Slash pine----------	78	10	
						Southern red oak----	---	---	
						White oak-----------	---	---	
						Yellow-poplar-------	---	---	
						Blackgum------------	---	---	
						Hickory-------------	---	---	
OcB---------------- Ocilla	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine-------	85	8	Loblolly pine.
						Longleaf pine-------	77	7	
Og----------------- Ogeechee	Slight	Severe	Moderate	Slight	Moderate	Loblolly pine-------	90	9	Loblolly pine, sweetgum.
						Pond pine-----------	70	4	
OrA---------------- Orangeburg	Slight	Slight	Slight	Slight	Moderate	Loblolly pine-------	80	8	Loblolly pine.
						Longleaf pine-------	77	7	
Pa----------------- Pamlico	Slight	Severe	Severe	--------	--------	Pond pine-----------	---	---	Baldcypress, loblolly pine, water tupelo.
						Baldcypress---------	---	---	
						Water tupelo--------	---	---	
Pe----------------- Paxville	Slight	Severe	Severe	Severe	Severe	Sweetgum------------	90	7	Water tupelo, sweetgum.
						Baldcypress---------	---	---	
						Water oak-----------	---	---	
						Water tupelo--------	---	---	
PnA, PnB----------- Pelion	Slight	Moderate	Slight	Moderate	Moderate	Loblolly pine-------	80	8	Loblolly pine.
PrA---------------- Persanti	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine-------	90	9	Loblolly pine, sweetgum, yellow-poplar.
						Shortleaf pine------	80	9	
						Water oak-----------	90	6	
						Sweetgum------------	90	7	
						Hickory-------------	---	---	

See footnotes at end of table.

Table 7.—Woodland Management and Productivity—Continued

Soil name and map symbol	Management concerns: Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Potential productivity: Common trees	Site index	Productivity class*	Trees to plant
Qz----------------- Quartzipsamments	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine-------	75	7	Loblolly pine.
Ra----------------- Rains	Slight	Moderate	Moderate	Severe	Severe	Loblolly pine------- Sweetgum------------	94 90	10 7	Loblolly pine, sweetgum, American sycamore.
Rv----------------- Riverview	Slight	Slight	Slight	Slight	Severe	Loblolly pine------- Yellow-poplar------- Sweetgum------------	100 110 100	11 9 10	Loblolly pine, yellow-poplar, sweetgum, eastern cottonwood, American sycamore.
Sm----------------- Smithboro	Slight	Moderate	Slight	Moderate	Severe	Loblolly pine------- Sweetgum------------	90 90	9 7	Loblolly pine, American sycamore, sweetgum.
TbB---------------- Tarboro	Slight	Moderate	Moderate	Slight	Slight	Loblolly pine------- Longleaf pine------- Southern red oak---- White oak-----------	72 --- --- ---	7 --- --- ---	Loblolly pine, longleaf pine.
TrB, TrC----------- Troup	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine------- Longleaf pine-------	80 70	8 6	Loblolly pine, longleaf pine.
UgB, UgC, UhB, UhC Uchee	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine------- Longleaf pine------- Shortleaf pine------	80 67 ---	8 5 ---	Loblolly pine, longleaf pine.
Ur----------------- Udorthents	Moderate	Moderate	Moderate	Slight	--------	Loblolly pine-------	50	5	Loblolly pine, Virginia pine.
WaB---------------- Wagram	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine------- Longleaf pine-------	81 72	8 6	Loblolly pine, longleaf pine.
WkA---------------- Wickham	Slight	Slight	Slight	Slight	Moderate	Loblolly pine------- Yellow-poplar------- White oak----------- Southern red oak---- Sweetgum------------ Red maple----------- Northern red oak---- Water oak----------- Hickory------------- Shortleaf pine------	90 89 84 82 --- --- --- --- --- ---	9 6 5 4 --- --- --- --- --- ---	Loblolly pine.

* Productivity is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 8.—Recreational Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe")

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
AaB------------------- Ailey	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
AeC, AeD-------------- Ailey	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: slope, droughty.
AgD------------------- Ailey	Moderate: slope, small stones, percs slowly.	Moderate: slope, small stones, too sandy.	Severe: slope, small stones.	Moderate: too sandy.	Moderate: small stones, droughty, slope.
AgE------------------- Ailey	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: too sandy, slope.	Severe: slope.
AhB------------------- Alaga	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
ApB------------------- Alpin	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
ApC------------------- Alpin	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
AuB------------------- Autryville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
BaD------------------- Badin	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----------	Moderate: slope, depth to rock.
BaF------------------- Badin	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
BnB------------------- Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
BnC------------------- Blanton	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
BoB------------------- Bonneau	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
By-------------------- Byars	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
CaB------------------- Candor	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.

See footnote at end of table.

Table 8.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
CaC, CaD: Candor	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Severe: droughty.
CdB: Candor	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Ce*:					
Chastain	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Chenneby	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
Ch: Chenneby	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, flooding.
CkA: Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness.
CmA: Clayham	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight	Slight.
CmB: Clayham	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
CnB2: Clayham	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight	Slight.
CoC, CoD: Cowarts	Moderate: slope, small stones, percs slowly.	Moderate: slope, small stones, percs slowly.	Severe: slope, small stones.	Slight	Moderate: small stones, droughty, slope.
CwC, CwD: Cowarts	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight	Moderate: droughty, slope.
CwE: Cowarts	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Cx: Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
EmA: Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: small stones, percs slowly.	Slight	Moderate: droughty.
EmB: Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Moderate: droughty.

See footnote at end of table.

Table 8.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
EmB2: Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, small stones, percs slowly.	Slight	Slight.
EuA: Eunola	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA: Faceville	Slight	Slight	Slight	Slight	Slight.
FaB, FaB2: Faceville	Slight	Slight	Moderate: slope.	Slight	Slight.
FxB: Foxworth	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
GoA: Goldsboro	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight	Slight.
HnA: Hornsville	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight	Slight.
HnB, HnB2: Hornsville	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.
Jo: Johnston	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
Kn: Kinston	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Le: Leon	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness.
LuB: Lucy	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
Ly: Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
MaA: Marlboro	Slight	Slight	Slight	Slight	Slight.
MaB: Marlboro	Slight	Slight	Moderate: slope.	Slight	Slight.
Mc: McColl	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
NaB, NbB2: Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight	Slight.

See footnote at end of table.

Table 8.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
NbC2------------------ Nankin	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight----------	Moderate: slope.
NcA------------------- Noboco	Slight----------	Slight----------	Slight----------	Slight----------	Slight.
NcB, NcB2------------- Noboco	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
NoA------------------- Norfolk	Slight----------	Slight----------	Slight----------	Slight----------	Moderate: droughty.
NoB------------------- Norfolk	Slight----------	Slight----------	Moderate: slope.	Slight----------	Moderate: droughty.
NrB2------------------ Norfolk	Slight----------	Slight----------	Moderate: slope.	Slight----------	Slight.
OcB------------------- Ocilla	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: wetness, droughty, too sandy.
Og-------------------- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
OrA------------------- Orangeburg	Slight----------	Slight----------	Slight----------	Slight----------	Slight.
Pa-------------------- Pamlico	Severe: flooding, ponding, excess humus.	Severe: ponding, excess humus.	Severe: excess humus, ponding, flooding.	Severe: ponding, excess humus.	Severe: ponding, flooding, excess humus.
Pe-------------------- Paxville	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
PnA, PnB-------------- Pelion	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: droughty.
PrA------------------- Persanti	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
Qz-------------------- Quartzipsamments	Severe: too sandy.	Severe: too sandy.	Severe: small stones, too sandy.	Severe: too sandy.	Severe: droughty.
Ra-------------------- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Rv-------------------- Riverview	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
Sm-------------------- Smithboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
TbB------------------- Tarboro	Severe: flooding, too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.

See footnote at end of table.

Table 8.—Recreational Development—Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
TrB: Troup	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
TrC: Troup	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy.	Severe: too sandy.	Moderate: droughty, slope.
UgB: Uchee	Severe: too sandy.	Severe: too sandy.	Severe: too sandy, small stones.	Severe: too sandy.	Moderate: droughty.
UgC: Uchee	Severe: too sandy.	Severe: too sandy.	Severe: slope, too sandy, small stones.	Severe: too sandy.	Moderate: droughty, slope.
UhB: Uchee	Severe: too sandy.	Severe: too sandy.	Moderate: slope.	Severe: too sandy.	Moderate: droughty.
UhC: Uchee	Severe: too sandy.	Severe: too sandy.	Severe: slope.	Severe: too sandy.	Moderate: droughty, slope.
Ur: Udorthents	Variable	Variable	Variable	Variable	Variable.
WaB: Wagram	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
WkA: Wickham	Slight	Slight	Slight	Slight	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 9.—Wildlife Habitat

(See text for definitions of "good," "fair," "poor," and "very poor")

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
AaB: Ailey	Poor	Fair	Fair	Poor	Poor	Poor	Very poor.	Fair	Poor	Very poor.
AeC, AeD: Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
AgD: Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
AgE: Ailey	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AhB: Alaga	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
ApB, ApC: Alpin	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
AuB: Autryville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BaD: Badin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BaF: Badin	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
BnB, BnC: Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
BoB: Bonneau	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
By: Byars	Fair	Good	Good	Good	Good	Poor	Good	Good	Good	Fair.
CaB, CaC, CaD, CdB: Candor	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Ce*:										
Chastain	Very poor.	Poor	Poor	Fair	Poor	Good	Good	Poor	Fair	Good.
Chenneby	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
Ch: Chenneby	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
CkA: Chewacla	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
CmA, CmB, CnB2: Clayham	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

See footnote at end of table.

Table 9.—Wildlife Habitat—Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
CoC, CoD, CwC, CwD, CwE: Cowarts	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Cx: Coxville	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
EmA, EmB, EmB2: Emporia	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EuA: Eunola	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FaA: Faceville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FaB, FaB2: Faceville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FxB: Foxworth	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
GoA: Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
HnA, HnB, HnB2: Hornsville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Jo: Johnston	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Kn: Kinston	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair.
Le: Leon	Poor	Fair	Fair	Poor	Fair	Poor	Fair	Fair	Fair	Poor.
LuB: Lucy	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Ly: Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
MaA, MaB: Marlboro	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Mc: McColl	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
NaB, NbB2: Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NbC2: Nankin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NcA: Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

Table 9.—Wildlife Habitat—Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
NcB, NcB2 Noboco	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
NoA, NoB, NrB2 Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OcB Ocilla	Fair	Fair	Good	Fair	Good	Fair	Fair	Fair	Good	Fair.
Og Ogeechee	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
OrA Orangeburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Pa Pamlico	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Pe Paxville	Very poor.	Very poor.	Very poor.	Fair	Poor	Good	Good	Very poor.	Poor	Good.
PnA Pelion	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
PnB Pelion	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
PrA Persanti	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Qz Quartzipsamments	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Ra Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good.
Rv Riverview	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Sm Smithboro	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
TbB Tarboro	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
TrB, TrC Troup	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
UgB Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UgC Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UhB Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
UhC Uchee	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

See footnote at end of table.

Table 9.—Wildlife Habitat—Continued

Soil name and map symbol	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
Ur----------------- Udorthents	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
WaB---------------- Wagram	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
WkA---------------- Wickham	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 10.—Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
AaB: Ailey	Severe: cutbanks cave.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty.
AeC, AeD: Ailey	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope, droughty.
AgD: Ailey	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, slope.
AgE: Ailey	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
AhB: Alaga	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy.
ApB: Alpin	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Severe: droughty.
ApC: Alpin	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
AuB: Autryville	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty, too sandy.
BaD: Badin	Moderate: depth to rock, too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
BaF: Badin	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
BnB: Blanton	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Severe: droughty.
BnC: Blanton	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
BoB: Bonneau	Severe: cutbanks cave.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty, too sandy.
By: Byars	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
CaB: Candor	Severe: cutbanks cave.	Slight	Slight	Slight	Slight	Severe: droughty.

See footnote at end of table.

Table 10.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
CaC, CaD---------- Candor	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
CdB--------------- Candor	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
Ce*:						
Chastain---------	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Chenneby---------	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Severe: flooding.
Ch---------------- Chenneby	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Moderate: wetness, flooding.
CkA--------------- Chewacla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness.	Severe: wetness, flooding.
CmA--------------- Clayham	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
CmB--------------- Clayham	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
CnB2-------------- Clayham	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
CoC, CoD---------- Cowarts	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, droughty, slope.
CwC, CwD---------- Cowarts	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
CwE--------------- Cowarts	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Cx---------------- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
EmA--------------- Emporia	Moderate: too clayey, wetness.	Slight---------	Moderate: wetness, shrink-swell.	Slight---------	Moderate: low strength.	Moderate: droughty.
EmB--------------- Emporia	Moderate: too clayey, wetness.	Slight---------	Moderate: wetness, shrink-swell.	Moderate: slope.	Moderate: low strength.	Moderate: droughty.
EmB2-------------- Emporia	Moderate: too clayey, wetness.	Slight---------	Moderate: wetness, shrink-swell.	Moderate: slope.	Moderate: low strength.	Slight.

See footnote at end of table.

Table 10.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
EuA--------------- Eunola	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
FaA--------------- Faceville	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Slight---------	Slight.
FaB, FaB2--------- Faceville	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
FxB--------------- Foxworth	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty, too sandy.
GoA--------------- Goldsboro	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.
HnA--------------- Hornsville	Moderate: too clayey, wetness.	Slight---------	Moderate: wetness.	Slight---------	Moderate: low strength.	Slight.
HnB, HnB2--------- Hornsville	Moderate: too clayey, wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Moderate: low strength.	Slight.
Jo---------------- Johnston	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding, flooding.
Kn---------------- Kinston	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding, low strength.	Severe: wetness, flooding.
Le---------------- Leon	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
LuB--------------- Lucy	Moderate: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty, too sandy.
Ly---------------- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
MaA--------------- Marlboro	Moderate: too clayey, wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Slight.
MaB--------------- Marlboro	Moderate: too clayey, wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Slight.
Mc---------------- McColl	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
NaB, NbB2--------- Nankin	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.

See footnote at end of table.

Table 10.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
NbC2 Nankin	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
NcA Noboco	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.
NcB, NcB2 Noboco	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Slight.
NoA Norfolk	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Moderate: droughty.
NoB Norfolk	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Moderate: droughty.
NrB2 Norfolk	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight	Slight.
OcB Ocilla	Severe: cutbanks cave, wetness.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, droughty, too sandy.
Og Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
OrA Orangeburg	Slight	Slight	Slight	Slight	Slight	Slight.
Pa Pamlico	Severe: cutbanks cave, excess humus, ponding.	Severe: flooding, ponding, low strength.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: low strength, flooding, ponding.	Severe: ponding, flooding, excess humus.
Pe Paxville	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding.
PnA, PnB Pelion	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: droughty.
PrA Persanti	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: shrink-swell, low strength, wetness.	Moderate: wetness.
Qz Quartzipsamments	Severe: cutbanks cave.	Slight	Slight	Moderate: slope.	Slight	Severe: droughty.
Ra Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Rv Riverview	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Sm Smithboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

See footnote at end of table.

Table 10.—Building Site Development—Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
TbB--------------- Tarboro	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Moderate: droughty, too sandy.
TrB--------------- Troup	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
TrC--------------- Troup	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
UgB--------------- Uchee	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: small stones, droughty.
UgC--------------- Uchee	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, droughty, slope.
UhB--------------- Uchee	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
UhC--------------- Uchee	Severe: cutbanks cave.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
Ur---------------- Udorthents	Variable-------	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Variable.
WaB--------------- Wagram	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty, too sandy.
WkA--------------- Wickham	Slight---------	Slight---------	Slight---------	Slight---------	Slight---------	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 11.—Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AaB: Ailey	Severe: percs slowly.	Severe: seepage.	Slight	Slight	Good.
AeC, AeD: Ailey	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
AgD: Ailey	Severe: percs slowly.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
AgE: Ailey	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
AhB: Alaga	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
ApB: Alpin	Slight	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
ApC: Alpin	Moderate: slope.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
AuB: Autryville	Moderate: wetness.	Severe: seepage.	Severe: wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
BaD: Badin	Severe: depth to rock.	Severe: depth to rock, flooding.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey, hard to pack.
BaF: Badin	Severe: depth to rock, slope.	Severe: depth to rock, flooding.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
BnB: Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BnC: Blanton	Moderate: wetness, slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: too sandy.
BoB: Bonneau	Severe: wetness.	Severe: seepage.	Severe: wetness.	Severe: seepage.	Good.
By: Byars	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.

See footnote at end of table.

Table 11.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
CaB: Candor	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
CaC, CaD: Candor	Severe: poor filter.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
CdB: Candor	Severe: poor filter.	Severe: seepage.	Severe: wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Ce*:					
Chastain	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Chenneby	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.
Ch: Chenneby	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.
CkA: Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Poor: hard to pack.
CmA: Clayham	Severe: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight	Fair: too clayey, hard to pack.
CmB: Clayham	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey, hard to pack.
CnB2: Clayham	Severe: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight	Fair: too clayey, hard to pack.
CoC, CoD: Cowarts	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
CwC, CwD: Cowarts	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
CwE: Cowarts	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Cx: Coxville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

Table 11.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
EmA, EmB, EmB2------ Emporia	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Moderate: wetness, too clayey.	Slight-----------	Fair: too clayey, wetness.
EuA----------------- Eunola	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: too clayey, wetness, thin layer.
FaA----------------- Faceville	Slight-----------	Moderate: seepage.	Moderate: too clayey.	Good-------------	Fair: too clayey.
FaB, FaB2----------- Faceville	Slight-----------	Moderate: seepage, slope.	Moderate: too clayey.	Good-------------	Fair: too clayey.
FxB----------------- Foxworth	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Poor: seepage, too sandy.
GoA----------------- Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
HnA, HnB, HnB2------ Hornsville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, hard to pack, wetness.
Jo------------------ Johnston	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: ponding.
Kn------------------ Kinston	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
Le------------------ Leon	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
LuB----------------- Lucy	Slight-----------	Severe: seepage.	Slight-----------	Severe: seepage.	Fair: too clayey.
Ly------------------ Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
MaA----------------- Marlboro	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
MaB----------------- Marlboro	Moderate: wetness, percs slowly.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
Mc------------------ McColl	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Poor: ponding.

See footnote at end of table.

Table 11.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
NaB, NbB2 Nankin	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey.
NbC2 Nankin	Severe: percs slowly.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
NcA, NcB, NcB2 Noboco	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
NoA, NoB, NrB2 Norfolk	Moderate: wetness, percs slowly.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey.
OcB Ocilla	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Fair: wetness.
Og Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
OrA Orangeburg	Slight	Moderate: seepage.	Slight	Slight	Good.
Pa Pamlico	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, excess humus.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, excess humus, ponding.
Pe Paxville	Severe: ponding.	Severe: seepage, ponding.	Severe: seepage, ponding.	Severe: ponding.	Poor: ponding.
PnA, PnB Pelion	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
PrA Persanti	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Fair: too clayey, hard to pack, wetness.
Qz Quartzipsamments	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Ra Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Rv Riverview	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Fair: thin layer.
Sm Smithboro	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

Table 11.—Sanitary Facilities—Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
TbB: Tarboro	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
TrB: Troup	Slight	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
TrC: Troup	Moderate: slope.	Severe: seepage, slope.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
UgB: Uchee	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UgC: Uchee	Severe: wetness, percs slowly.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UhB: Uchee	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
UhC: Uchee	Severe: wetness, percs slowly.	Severe: seepage, slope.	Severe: seepage, too sandy.	Severe: seepage.	Poor: too sandy.
Ur: Udorthents	Variable	Variable	Variable	Slight	Variable.
WaB: Wagram	Moderate: percs slowly.	Severe: seepage.	Slight	Severe: seepage.	Good.
WkA: Wickham	Moderate: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight	Fair: too clayey.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 12.—Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
AaB, AeC, AeD---------Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
AgD-------------------Ailey	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
AgE-------------------Ailey	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
AhB-------------------Alaga	Good	Probable	Improbable: too sandy.	Poor: too sandy.
ApB, ApC--------------Alpin	Good	Probable	Improbable: too sandy.	Poor: too sandy.
AuB-------------------Autryville	Good	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
BaD-------------------Badin	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.
BaF-------------------Badin	Poor: depth to rock, slope, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
BnB, BnC--------------Blanton	Good	Probable	Improbable: too sandy.	Poor: too sandy.
BoB-------------------Bonneau	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
By--------------------Byars	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
CaB, CaC, CaD, CdB----Candor	Good	Improbable: thin layer.	Improbable: too sandy.	Poor: too sandy.
Ce*:				
Chastain	Poor: wetness.	Probable	Improbable: excess fines.	Poor: too clayey, wetness.
Chenneby	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Ch--------------------Chenneby	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
CkA-------------------Chewacla	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.

See footnote at end of table.

Table 12.—Construction Materials—Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
CmA, CmB, CnB2-------- Clayham	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
CoC, CoD-------------- Cowarts	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
CwC, CwD-------------- Cowarts	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
CwE------------------- Cowarts	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Cx-------------------- Coxville	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
EmA, EmB-------------- Emporia	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, small stones.
EmB2------------------ Emporia	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
EuA------------------- Eunola	Fair: wetness.	Probable-------------	Improbable: too sandy.	Fair: too clayey, small stones, thin layer.
FaA, FaB, FaB2-------- Faceville	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
FxB------------------- Foxworth	Good-----------------	Probable-------------	Improbable: too sandy.	Poor: too sandy.
GoA------------------- Goldsboro	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
HnA, HnB, HnB2-------- Hornsville	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Jo-------------------- Johnston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Kn-------------------- Kinston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Le-------------------- Leon	Poor: wetness.	Probable-------------	Improbable: too sandy.	Poor: too sandy, wetness.
LuB------------------- Lucy	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
Ly-------------------- Lynchburg	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
MaA, MaB-------------- Marlboro	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

Table 12.—Construction Materials—Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
Mc------- McColl	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, wetness, too clayey.
NaB, NbB2, NbC2------- Nankin	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
NcA, NcB, NcB2------- Noboco	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
NoA, NoB, NrB2------- Norfolk	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
OcB------- Ocilla	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
Og------- Ogeechee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
OrA------- Orangeburg	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Pa------- Pamlico	Poor: low strength, wetness.	Probable	Improbable: too sandy.	Poor: excess humus, wetness.
Pe------- Paxville	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
PnA, PnB------- Pelion	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, thin layer.
PrA------- Persanti	Fair: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Qz------- Quartzipsamments	Good	Probable	Improbable: too sandy.	Poor: too sandy, small stones.
Ra------- Rains	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Rv------- Riverview	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, thin layer.
Sm------- Smithboro	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
TbB------- Tarboro	Good	Probable	Improbable: too sandy.	Poor: too sandy.
TrB, TrC------- Troup	Good	Probable	Improbable: too sandy.	Poor: too sandy.

See footnote at end of table.

Table 12.—Construction Materials—Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
UgB, UgC, UhB, UhC---- Uchee	Good-----------------	Improbable: thin layer.	Improbable: excess fines.	Poor: too sandy.
Ur-------------------- Udorthents	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Variable.
WaB------------------- Wagram	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Poor: too sandy.
WkA------------------- Wickham	Good-----------------	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 13.—Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Grassed waterways
AaB-Ailey	Moderate: seepage, slope.	Slight	Severe: no water.	Deep to water	Droughty, percs slowly, slope.	Droughty, rooting depth.
AeC, AeD-Ailey	Severe: slope.	Slight	Severe: no water.	Deep to water	Droughty, percs slowly, slope.	Slope, droughty, rooting depth.
AgD, AgE-Ailey	Severe: slope.	Slight	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, soil blowing, percs slowly.
AhB-Alaga	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty, rooting depth.
ApB-Alpin	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty.
ApC-Alpin	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty.
AuB-Autryville	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Slope, droughty, fast intake.	Droughty.
BaD, BaF-Badin	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Depth to rock, slope.	Slope, depth to rock.
BnB-Blanton	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty.
BnC-Blanton	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty.
BoB-Bonneau	Severe: seepage.	Severe: thin layer.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake.	Droughty.
By-Byars	Slight	Severe: hard to pack, ponding.	Severe: slow refill.	Ponding, percs slowly.	Ponding, percs slowly.	Wetness, percs slowly.
CaB-Candor	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty.
CaC, CaD-Candor	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty.

See footnote at end of table.

Table 13.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Grassed waterways
CdB: Candor	Severe: seepage.	Severe: seepage, piping.	Moderate: deep to water.	Deep to water	Slope, droughty, fast intake.	Droughty.
Ce*:						
Chastain	Severe: seepage.	Severe: hard to pack, wetness.	Severe: slow refill, cutbanks cave.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Chenneby	Moderate: seepage.	Severe: piping, hard to pack, wetness.	Moderate: slow refill.	Flooding	Wetness, erodes easily, flooding.	Wetness, erodes easily.
Ch: Chenneby	Moderate: seepage.	Severe: piping, hard to pack, wetness.	Moderate: slow refill.	Flooding	Wetness, erodes easily, flooding.	Wetness, erodes easily.
CkA: Chewacla	Moderate: seepage.	Severe: piping, hard to pack, wetness.	Moderate: slow refill.	Flooding	Wetness, flooding.	Wetness.
CmA: Clayham	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Soil blowing	Erodes easily.
CmB: Clayham	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, soil blowing.	Erodes easily.
CnB2: Clayham	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Favorable	Erodes easily.
CoC, CoD: Cowarts	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty, percs slowly.
CwC, CwD: Cowarts	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty, rooting depth.
CwE: Cowarts	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty, percs slowly.
Cx: Coxville	Slight	Severe: wetness.	Severe: slow refill.	Favorable	Wetness, soil blowing.	Wetness.
EmA: Emporia	Moderate: seepage.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Fast intake, soil blowing.	Droughty, percs slowly.
EmB: Emporia	Moderate: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Fast intake, soil blowing, slope.	Droughty, percs slowly.
EmB2: Emporia	Moderate: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Soil blowing, slope.	Percs slowly.

See footnote at end of table.

Table 13.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Grassed waterways
EuA—Eunola	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable	Wetness, fast intake.	Favorable.
FaA—Faceville	Moderate: seepage.	Slight	Severe: no water.	Deep to water	Fast intake	Erodes easily.
FaB—Faceville	Moderate: seepage, slope.	Slight	Severe: no water.	Deep to water	Slope, fast intake.	Erodes easily.
FaB2—Faceville	Moderate: seepage, slope.	Slight	Severe: no water.	Deep to water	Slope	Erodes easily.
FxB—Foxworth	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Deep to water	Slope, droughty, fast intake.	Droughty.
GoA—Goldsboro	Moderate: seepage.	Moderate: piping, wetness.	Moderate: deep to water, slow refill.	Favorable	Wetness, droughty, fast intake.	Droughty, rooting depth.
HnA—Hornsville	Moderate: seepage.	Severe: hard to pack.	Severe: slow refill.	Favorable	Wetness	Favorable.
HnB, HnB2—Hornsville	Moderate: seepage, slope.	Severe: hard to pack.	Severe: slow refill.	Slope	Slope, wetness.	Favorable.
Jo—Johnston	Severe: seepage.	Severe: piping, ponding.	Severe: cutbanks cave.	Ponding, flooding.	Ponding, droughty, flooding.	Wetness, droughty.
Kn—Kinston	Moderate: seepage.	Severe: wetness.	Slight	Flooding	Wetness, flooding.	Wetness.
Le—Leon	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty.	Wetness, droughty.
LuB—Lucy	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Droughty.
Ly—Lynchburg	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable	Wetness, soil blowing.	Wetness.
MaA—Marlboro	Moderate: seepage.	Severe: piping.	Moderate: deep to water.	Deep to water	Soil blowing	Favorable.
MaA—Marlboro	Moderate: seepage, slope.	Severe: piping.	Moderate: deep to water.	Deep to water	Slope, soil blowing.	Favorable.
Mc—McColl	Moderate: seepage.	Severe: piping, ponding.	Severe: slow refill.	Ponding, percs slowly.	Ponding, droughty.	Wetness, droughty, rooting depth.

See footnote at end of table.

Table 13.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Grassed waterways
NaB: Nankin	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake, slope.	Favorable.
NbB2: Nankin	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Deep to water	Slope	Favorable.
NbC2: Nankin	Severe: slope.	Moderate: piping.	Severe: no water.	Deep to water	Slope	Slope.
NcA: Noboco	Moderate: seepage.	Severe: piping.	Severe: cutbanks cave.	Favorable	Wetness, fast intake.	Rooting depth.
NcB: Noboco	Moderate: seepage, slope.	Severe: piping.	Severe: cutbanks cave.	Slope	Slope, wetness, fast intake.	Rooting depth.
NcB2: Noboco	Moderate: seepage, slope.	Severe: piping.	Moderate: deep to water, slow refill.	Slope	Slope, wetness.	Rooting depth.
NoA: Norfolk	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Fast intake, soil blowing.	Favorable.
NoB: Norfolk	Moderate: seepage, slope.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Slope, fast intake.	Favorable.
NrB2: Norfolk	Moderate: seepage, slope.	Severe: piping.	Moderate: deep to water, slow refill.	Deep to water	Slope, soil blowing.	Favorable.
OcB: Ocilla	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable	Wetness, droughty, fast intake.	Droughty.
Og: Ogeechee	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Favorable	Wetness	Wetness.
OrA: Orangeburg	Moderate: seepage.	Moderate: piping.	Severe: no water.	Deep to water	Fast intake	Favorable.
Pa: Pamlico	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, flooding, subsides.	Ponding, flooding.	Wetness.
Pe: Paxville	Severe: seepage.	Severe: piping, ponding.	Severe: cutbanks cave.	Ponding	Ponding	Wetness.
PnA: Pelion	Moderate: seepage.	Severe: seepage, piping.	Severe: no water.	Percs slowly	Droughty, fast intake.	Droughty.
PnB: Pelion	Moderate: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Percs slowly, slope.	Droughty, fast intake.	Droughty.

See footnote at end of table.

Table 13.—Water Management—Continued

Soil name and map symbol	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Grassed waterways
PrA--------------- Persanti	Slight---------	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly---	Wetness, soil blowing.	Percs slowly.
Qz---------------- Quartzipsamments	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Droughty.
Ra---------------- Rains	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable------	Wetness--------	Wetness.
Rv---------------- Riverview	Severe: seepage.	Severe: piping.	Severe: cutbanks cave.	Deep to water	Flooding-------	Favorable.
SmA--------------- Smithboro	Slight---------	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly---	Wetness, percs slowly.	Wetness, erodes easily, percs slowly.
TbB--------------- Tarboro	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Droughty, rooting depth.
TrB--------------- Troup	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Droughty.
TrC--------------- Troup	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Slope, droughty.
UgB--------------- Uchee	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty.
UgC--------------- Uchee	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty.
UhB--------------- Uchee	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty.
UhC--------------- Uchee	Severe: seepage, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Slope, droughty.
Ur---------------- Udorthents	Variable-------	Slight---------	Severe: no water.	Deep to water	Variable-------	Variable.
WaB--------------- Wagram	Severe: seepage.	Slight---------	Severe: no water.	Deep to water	Slope, droughty, fast intake.	Droughty, rooting depth.
WkA--------------- Wickham	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Favorable------	Favorable.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 14.—Engineering Index Properties

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
AaB-------------- Ailey	0-23	Sand-------------	SP-SM	A-2, A-3	85-100	75-95	50-75	5-12	---	NP
	23-40	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	60-90	30-40	20-40	3-16
	40-56	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	55-90	20-40	20-40	3-15
	56-65	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	85-100	75-100	50-85	15-40	<40	NP-14
AeC, AeD--------- Ailey	0-29	Sand-------------	SP-SM	A-2, A-3	85-100	75-95	50-75	5-12	---	NP
	29-33	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	60-90	30-40	20-40	3-16
	33-42	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	55-90	20-50	20-40	3-16
	42-65	Coarse sandy loam, sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	85-100	75-100	50-85	15-40	<40	NP-14
AgD, AgE--------- Ailey	0-22	Gravelly loamy sand.	SM, SP-SM	A-2, A-3	75-85	60-75	40-70	5-20	0-14	NP
	22-38	Sandy loam-------	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	60-90	30-40	20-40	3-16
	38-47	Sandy clay loam--	SM, SC, SC-SM	A-2, A-4, A-6	90-100	75-100	55-90	20-50	20-40	3-16
	47-65	Sandy loam-------	SM, SC, SC-SM	A-2, A-4, A-6	85-100	75-100	50-80	15-40	0-40	NP-14
AhB-------------- Alaga	0-9	Sand-------------	SM, SP-SM	A-2, A-1-b, A-3	100	90-100	40-70	5-25	---	NP
	9-80	Loamy sand, loamy fine sand, fine sand.	SM, SW-SM, SP-SM	A-2	100	100	50-85	10-35	<25	NP-4
ApB, ApC--------- Alpin	0-6	Sand-------------	SP-SM, SM	A-3, A-2-4	95-100	90-100	60-100	5-20	---	NP
	6-40	Fine sand, sand	SP-SM, SM	A-3, A-2-4	95-100	90-100	60-100	5-20	---	NP
	40-80	Fine sand, sand	SP-SM, SM	A-2-4	95-100	90-100	60-100	11-20	---	NP
AuB-------------- Autryville	0-25	Sand-------------	SP-SM, SM	A-2, A-3	100	100	50-100	5-20	---	NP
	25-37	Sandy loam, sandy clay loam, fine sandy loam.	SM	A-2	100	100	50-100	15-30	<25	NP-3
	37-50	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	100	100	50-100	5-20	---	NP
	50-65	Sandy loam, sandy clay loam, fine sandy loam.	SM, SC, SC-SM	A-2, A-4	100	100	60-100	20-49	<30	NP-10

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In								Pct	
BaD, BaF--------- Badin	0-6	Silt loam--------	ML, CL, CL-ML	A-4, A-6	85-100	75-95	65-90	60-85	25-40	5-15
	6-31	Silty clay, silty clay loam, channery silty clay loam.	CL, CH	A-6, A-7	65-100	60-100	55-100	50-98	30-65	15-35
	31-60	Weathered bedrock	---	---	---	---	---	---	---	---
BnB, BnC--------- Blanton	0-70	Sand-------------	SP-SM, SM	A-3, A-2-4	100	90-100	65-100	5-20	---	NP
	70-80	Sandy clay loam, sandy loam, sandy clay.	SC, SC-SM, SM	A-4, A-2-4, A-2-6, A-6	100	95-100	69-100	25-50	12-45	3-22
BoB-------------- Bonneau	0-24	Sand-------------	SM, SP-SM	A-2, A-3	100	100	60-95	8-20	---	NP
	24-51	Sandy loam, sandy clay loam, fine sandy loam.	SC, SC-SM	A-2, A-6, A-4	100	100	60-100	30-50	21-40	4-21
	51-70	Sandy loam, sandy clay loam, sandy clay.	CL, SC, SC-SM, CL-ML	A-4, A-6, A-2	100	100	60-95	25-60	20-40	4-18
By--------------- Byars	0-19	Loam-------------	CL, ML	A-6, A-7-6, A-4	98-100	98-100	90-100	70-95	32-50	11-23
	19-32	Clay, clay loam, sandy clay.	CL, CH	A-7-5, A-7-6, A-6	98-100	98-100	90-100	60-95	39-75	17-42
	32-60	Clay, silty clay loam, silty clay.	CL	A-6, A-7, A-4	98-100	98-100	90-100	75-98	30-45	8-20
CaB, CaC, CaD---- Candor	0-26	Sand-------------	SM, SP-SM	A-2, A-3, A-2-4	98-100	96-100	55-90	5-15	---	NP
	26-38	Loamy sand-------	SM, SP-SM	A-2, A-2-4	98-100	96-100	63-90	10-25	---	NP
	38-58	Sand-------------	SM, SP-SM	A-2, A-3	90-100	90-100	55-90	5-15	---	NP
	58-70	Sandy loam, sandy clay loam.	SC, SC-SM, SM	A-2, A-4, A-6, A-7	90-100	90-100	55-90	25-49	<45	NP-25
CdB-------------- Candor	0-9	Sand-------------	SM, SP-SM	A-2, A-3, A-2-4	98-100	96-100	55-90	5-15	---	NP
	9-43	Loamy sand-------	SM, SP-SM	A-2, A-2-4	98-100	96-100	63-90	10-25	---	NP
	43-56	Sand-------------	SM, SP-SM	A-2, A-3	90-100	90-100	55-90	5-15	---	NP
	56-70	Sandy loam, sandy clay loam.	SC, SC-SM, SM	A-2, A-4, A-6, A-7	90-100	90-100	55-90	25-49	<45	NP-25
Ce*: Chastain---------	0-12	Loam-------------	ML, CL, CL-ML	A-4, A-6, A-7	100	100	90-100	70-95	23-45	3-18
	12-54	Silty clay loam, clay loam, clay.	CL, CH, ML, MH	A-6, A-7	100	100	95-100	85-98	35-75	12-40
	54-75	Loamy sand, sand, fine sand.	SP, SM, SP-SM	A-2, A-3	90-100	85-100	51-90	4-25	---	NP

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Ce*:										
Chenneby--------	0-2	Silt loam--------	CL, ML, CL-ML	A-4, A-6	100	95-100	90-100	60-90	20-35	3-15
	2-54	Loam, silt loam, silty clay loam.	CL, ML, MH, CH	A-4, A-6, A-7	100	95-100	90-100	75-95	30-55	8-20
	54-72	Stratified sandy loam to silty clay loam.	SM, ML, SC, CL	A-2-4, A-4	100	100	65-90	20-75	<30	NP-8
Ch--------------- Chenneby	0-2	Silt loam--------	CL, ML, CL-ML	A-4, A-6	100	95-100	90-100	60-90	20-35	3-15
	2-39	Loam, silt loam, silty clay loam.	CL, ML, MH, CH	A-4, A-6, A-7	100	95-100	90-100	75-95	30-55	8-20
	39-72	Stratified sandy loam to silty clay loam.	SM, ML, SC, CL	A-2-4, A-4	100	100	65-90	20-75	<30	NP-8
CkA-------------- Chewacla	0-34	Loam-------------	ML, CL, CL-ML	A-4, A-6, A-7	98-100	95-100	70-100	30-50	25-49	4-20
	34-43	Silt loam, silty clay loam, clay loam.	ML, CL	A-4, A-6, A-7	96-100	95-100	80-100	51-98	30-49	4-22
	43-66	Variable---------	---	---	---	---	---	---	---	---
CmA, CmB--------- Clayham	0-4	Loam-------------	SM, SC-SM, ML	A-2, A-4, A-6	97-100	95-100	85-100	45-80	15-25	NP-7
	4-46	Clay loam, silty clay, clay.	CL, CH, MH	A-7, A-6	97-100	95-100	90-100	35-55	30-50	10-25
	46-65	Sandy loam, sandy clay loam, loam.	SC-SM, CL, SL-ML	A-2, A-4, A-6	97-100	95-100	60-98	8-35	20-41	3-15
CnB2------------- Clayham	0-5	Clay loam--------	CL-ML, CL, SC	A-2, A-4, A-7-6	97-100	95-100	80-100	30-70	20-41	5-15
	5-55	Clay loam, silty clay, clay.	CL, CH, MH	A-7, A-6	97-100	95-100	90-100	35-55	30-50	10-25
	55-65	Sandy loam, sandy clay loam, loam.	SC-SM, CL, SL-ML	A-2, A-4, A-6	97-100	95-100	60-98	8-35	20-41	3-15
CoC-------------- Cowarts	0-9	Gravelly loamy sand.	SM	A-2	75-95	60-85	50-70	13-30	---	NP
	9-22	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	95-100	90-100	60-90	25-50	20-54	5-23
	22-72	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	30-58	25-53	5-20
CoD-------------- Cowarts	0-5	Gravelly loamy sand.	SM	A-2	75-95	60-85	50-70	13-30	---	NP
	5-9	Fine sandy loam, sandy loam, sandy clay loam.	SC-SM, SC	A-2, A-4, A-6	95-100	90-100	60-90	23-45	20-40	5-15
	9-22	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	95-100	90-100	60-90	25-50	20-54	5-23
	22-72	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	30-58	25-53	5-20

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
CwC, CwD--------- Cowarts	0-9	Loamy sand-------	SM	A-2	90-100	85-100	50-80	13-30	---	NP
	9-22	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	95-100	90-100	60-95	25-50	20-54	5-25
	22-72	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	25-58	25-53	5-20
CwE-------------- Cowarts	0-9	Gravelly loamy sand.	SM	A-2	75-95	60-85	50-70	13-30	---	NP
	9-22	Sandy clay loam, sandy clay, clay loam.	SM, SC	A-6, A-7, A-2-6	95-100	90-100	60-90	25-50	20-54	5-23
	22-72	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	85-100	80-100	60-95	30-58	25-53	5-20
Cx--------------- Coxville	0-6	Loam-------------	SM, ML, CL-ML, CL	A-4, A-6, A-7	100	100	85-97	46-75	20-46	3-15
	6-72	Clay loam, sandy clay, clay.	CL, CH	A-6, A-7	100	100	85-98	50-85	30-55	12-35
EmA, EmB--------- Emporia	0-11	Loamy sand-------	SM, SC-SM	A-2, A-1, A-4	90-100	80-100	40-85	15-40	<18	NP-7
	11-37	Sandy clay loam, sandy loam, clay loam.	SC, CL	A-2, A-4, A-6, A-7	90-100	80-100	45-95	25-70	20-50	8-30
	37-45	Sandy clay loam, clay loam, sandy clay.	SC, CL, CH	A-2, A-4, A-6, A-7	90-100	80-100	45-95	30-80	25-55	8-30
	45-60	Stratified sandy loam to clay.	SM, SC, ML, CL	A-1, A-2, A-4, A-6	70-100	55-100	30-90	20-60	<40	NP-25
EmB2------------- Emporia	0-3	Sandy loam-------	CL, SC, SM, ML	A-2, A-4, A-6	90-100	80-100	50-95	25-65	<25	NP-15
	3-40	Sandy clay loam, sandy loam, clay loam.	SC, CL	A-2, A-4, A-6, A-7	90-100	80-100	45-95	25-70	20-50	8-30
	40-48	Sandy clay loam, clay loam, sandy clay.	SC, CL, CH	A-2, A-4, A-6, A-7	90-100	80-100	45-95	30-80	25-55	8-30
	48-60	Stratified sandy loam to clay.	SM, SC, ML, CL	A-1, A-2, A-4, A-6	70-100	55-100	30-90	20-60	<40	NP-25
EuA-------------- Eunola	0-5	Loamy sand-------	SM, SP-SM	A-2, A-4, A-2-4	100	98-100	50-80	10-38	---	NP
	5-20	Sandy clay loam, clay loam, fine sandy loam.	SM, SC, SC-SM, CL	A-4, A-2, A-6	100	90-100	75-95	30-60	<36	NP-15
	20-42	Sandy clay loam, sandy clay, clay loam.	SM, SC, ML, CL	A-4, A-6, A-7	100	98-100	80-95	36-60	22-50	3-26
	42-51	Sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4	100	98-100	60-70	30-40	<30	NP-10
	51-60	Sand, loamy sand, fine sand.	SM, SP-SM	A-2, A-3	100	98-100	50-75	5-30	---	NP

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In								Pct	
FaA, FaB--------- Faceville	0-6	Loamy sand-------	SM	A-2	90-100	85-100	72-97	13-25	---	NP
	6-60	Sandy clay, clay, clay loam.	CL, SC, CH, ML	A-6, A-7	98-100	95-100	75-99	45-72	25-52	11-25
FaB2------------- Faceville	0-2	Sandy clay loam	SM, CL-ML, ML, SC-SM	A-4	90-100	90-100	63-97	40-58	<25	NP-7
	2-60	Sandy clay, clay, clay loam.	CL, SC, CH, ML	A-6, A-7	98-100	95-100	75-99	45-72	25-52	11-25
FxB-------------- Foxworth	0-9	Sand-------------	SP-SM	A-3, A-2-4	100	100	60-100	5-12	---	NP
	9-58	Sand, fine sand	SP-SM	A-3, A-2-4	100	100	60-100	5-12	---	NP
	58-80	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	50-100	1-12	---	NP
GoA-------------- Goldsboro	0-5	Loamy sand-------	SM	A-2	95-100	95-100	50-95	13-30	<20	NP
	5-19	Sandy clay loam, sandy loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	98-100	95-100	60-100	25-55	16-37	4-18
	19-65	Sandy clay loam, clay loam, sandy clay.	SC, CL, CL-ML, CH	A-4, A-6, A-7-6	95-100	90-100	65-95	36-70	25-55	6-32
HnA-------------- Hornsville	0-6	Loam-------------	SM, SC-SM, SC	A-2-4, A-2, A-6, A-4	100	100	60-100	20-50	15-30	NP-7
	6-47	Sandy clay, clay loam, clay.	SC, CL, CH, MH	A-6, A-7	100	100	70-98	45-70	38-56	15-25
	47-68	Sandy clay loam, sandy loam, fine sandy loam.	SM, SC-SM, SC	A-2-4, A-2-6, A-4, A-6	100	100	60-100	18-50	<30	NP-12
HnB-------------- Hornsville	0-6	Sandy loam-------	SM	A-2-4, A-4	100	100	60-95	30-50	<30	NP-7
	6-47	Sandy clay, clay loam, clay.	SC, CL, CH, MH	A-6, A-7	100	100	70-98	45-70	38-56	15-25
	47-68	Sandy clay loam, sandy loam, fine sandy loam.	SM, SC-SM, SC	A-2-4, A-2-6, A-4, A-6	100	100	60-100	18-50	<30	NP-12
HnB2------------- Hornsville	0-6	Sandy clay loam	SM, SC-SM, SC	A-2-4, A-2, A-6, A-4	100	100	60-100	20-50	15-30	NP-7
	6-52	Sandy clay, clay loam, clay.	SC, CL, CH, MH	A-6, A-7	100	100	70-98	45-70	38-56	15-25
	52-62	Sandy clay loam, sandy loam, fine sandy loam.	SM, SC-SM, SC	A-2-4, A-2-6, A-4, A-6	100	100	60-100	18-50	<30	NP-12
Jo--------------- Johnston	0-23	Sandy loam-------	ML, SM	A-2, A-4	100	100	60-100	18-65	<35	NP-10
	23-40	Stratified loamy sand to sand.	SM, SP-SM	A-2, A-3	100	100	50-100	5-30	---	NP
	40-60	Statified fine sandy loam to sandy loam.	SM	A-2, A-4	100	100	50-100	25-49	<35	NP-10

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
Kn--------------- Kinston	0-3	Loam-------------	ML, CL, CL-ML	A-4, A-6	100	98-100	85-100	50-97	17-40	4-15
	3-42	Loam, clay loam, sandy clay loam.	CL	A-4, A-6, A-7	100	95-100	75-100	60-95	20-45	8-22
	42-60	Variable---------	---	---	---	---	---	---	---	---
Le--------------- Leon	0-3	Sand-------------	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	3-28	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	28-48	Sand, fine sand, loamy sand.	SM, SP-SM, SP	A-3, A-2-4	100	100	80-100	3-20	---	NP
	48-60	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
LuB-------------- Lucy	0-22	Sand-------------	SM, SP-SM	A-2	95-100	90-100	50-75	10-30	---	NP
	22-39	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SC-SM	A-2, A-4, A-6	97-100	95-100	55-95	15-50	10-30	NP-15
	39-67	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, SM	A-2, A-6, A-4	100	95-100	60-95	20-50	20-40	3-20
Ly--------------- Lynchburg	0-11	Sandy loam-------	SM, ML, SC-SM, CL-ML	A-2, A-4	92-100	90-100	75-100	25-55	<30	NP-7
	11-63	Sandy clay loam, sandy loam, clay loam.	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6	92-100	90-100	70-100	25-67	15-40	4-18
MaA, MaB--------- Marlboro	0-7	Sandy loam-------	SM, ML	A-2, A-4	98-100	95-100	75-100	30-60	<35	NP-7
	7-53	Sandy clay, clay loam, clay.	CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	78-100	51-70	25-48	6-20
	53-70	Sandy clay loam, sandy clay, clay.	CL, ML, SM, SC	A-4, A-6, A-7	98-100	95-100	74-100	45-70	24-48	6-20
Mc--------------- McColl	0-9	Loam-------------	SC, CL-ML, CL, SC-SM	A-4, A-6	100	95-100	75-90	45-65	20-40	5-20
	9-17	Clay loam, sandy clay, clay.	SC, CL	A-4, A-6, A-7	100	95-100	80-98	36-75	25-50	8-23
	17-37	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	100	95-100	65-90	32-60	20-40	3-15
	37-85	Sandy clay loam, sandy loam, sandy clay.	SM, SC, SC-SM	A-2, A-4, A-6, A-7	100	95-100	60-80	30-50	15-52	3-22
NaB-------------- Nankin	0-6	Loamy fine sand	SM, SP-SM	A-2	85-100	85-100	50-85	10-35	---	NP
	6-10	Sandy clay loam, sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	97-100	95-100	75-90	25-45	20-35	4-15
	10-57	Sandy clay, clay, sandy clay loam.	SC, CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	75-95	40-70	25-45	7-20
	57-65	Sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	98-100	95-100	70-85	25-55	20-40	4-16

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
NbB2, NbC2------- Nankin	0-5	Sandy loam-------	SM, SC-SM	A-2, A-4	85-100	85-100	70-90	25-45	<25	NP-4
	5-52	Sandy clay loam, sandy loam.	SC, SM, SC-SM	A-2, A-4, A-6	97-100	95-100	75-90	25-45	20-35	4-15
	52-62	Sandy clay, clay, sandy clay loam.	SC, CL, ML, CL-ML	A-4, A-6, A-7	98-100	95-100	75-95	40-70	25-45	7-20
NcA, NcB--------- Noboco	0-13	Loamy sand-------	SM	A-2	95-100	92-100	50-95	13-30	<20	NP
	13-38	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6	95-100	95-100	70-96	30-63	20-38	4-15
	38-62	Sandy clay loam, clay loam, sandy clay.	SC-SM, SC, CL, CL-ML	A-4, A-6, A-7-6	98-100	98-100	70-98	36-72	20-52	4-23
NcB2------------- Noboco	0-3	Sandy loam-------	SM, SC-SM, SC	A-2	95-100	95-100	50-91	15-33	<25	NP-14
	3-36	Sandy loam, sandy clay loam, clay loam.	SC-SM, SC, CL, CL-ML	A-2, A-4, A-6	95-100	95-100	70-96	30-63	20-38	4-15
	36-60	Sandy clay loam, clay loam, sandy clay.	SC-SM, SC, CL, CL-ML	A-4, A-6, A-7-6	98-100	98-100	70-98	36-72	20-52	4-23
NoA, NoB--------- Norfolk	0-15	Loamy sand-------	SM	A-2	95-100	92-100	50-95	13-30	<20	NP
	15-42	Sandy loam, sandy clay loam, clay loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	95-100	91-100	70-96	30-63	20-38	4-15
	42-72	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7-6	100	98-100	65-98	36-72	20-52	4-23
NrB2------------- Norfolk	0-3	Fine sandy loam	SM, SC-SM, SC	A-2	95-100	95-100	50-91	15-33	<25	NP-14
	3-66	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7-6	100	98-100	65-98	36-72	20-52	4-23
	66-72	Variable---------	---	---	---	---	---	---	---	---
OcB-------------- Ocilla	0-23	Sand-------------	SM, SP-SM	A-2, A-3	100	95-100	70-100	8-35	---	NP
	23-42	Sandy loam, sandy clay loam, fine sandy loam.	SM, CL, SC, ML	A-2, A-4, A-6	100	95-100	80-100	20-55	20-40	NP-18
	42-60	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-4, A-6, A-7	100	95-100	80-100	36-60	20-45	7-20
Og--------------- Ogeechee	0-9	Sandy loam-------	SM, SC-SM	A-2, A-1-b	100	95-100	48-87	15-27	<30	NP-7
	9-42	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	65-90	40-55	27-40	12-23
	42-56	Sandy clay, sandy clay loam, clay.	SC, CL	A-6, A-7	100	95-100	65-90	43-65	32-46	16-24
	56-72	Sandy clay loam, sandy loam.	SC	A-6, A-2	100	90-100	50-65	25-45	30-40	15-25
OrA-------------- Orangeburg	0-17	Loamy sand-------	SM	A-2	98-100	95-100	60-87	14-28	---	NP
	17-75	Sandy clay loam, sandy clay, sandy loam.	SC, CL	A-6, A-4, A-7	98-100	95-100	70-97	40-65	24-46	8-21

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In								Pct	
Pa--------------- Pamlico	0-42	Muck-------------	PT	---	---	---	---	---	---	---
	42-60	Loamy sand, sand, loamy fine sand.	SM, SP-SM	A-2, A-3	100	100	70-95	5-20	---	NP
Pe--------------- Paxville	0-14	Loam-------------	SM, ML, SC-SM	A-2, A-4	100	100	80-98	30-60	<35	NP-7
	14-38	Sandy clay loam, sandy loam, loam.	CL-ML, CL, SC-SM, SC	A-2, A-4, A-6	100	98-100	60-98	30-60	21-40	5-15
	38-45	Sandy loam, loamy sand, fine sandy loam.	SM, SP-SM	A-2, A-3	100	98-100	60-98	5-35	<30	NP-4
	45-60	Loamy sand, sand, fine sand.	SM, SP-SM	A-2, A-3, A-1	95-100	90-100	45-65	5-25	---	NP
PnA, PnB--------- Pelion	0-14	Loamy sand-------	SP, SM, SP-SM	A-2, A-3	98-100	95-100	45-85	5-30	10-25	NP
	14-24	Sandy clay loam, clay loam.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	95-100	92-100	50-90	25-55	20-40	5-18
	24-44	Sandy clay loam, sandy clay, clay.	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6, A-7	98-100	92-100	50-90	25-60	20-47	5-26
	44-63	Sandy clay loam, sandy loam.	SM, SC, SC-SM	A-2, A-4, A-6	98-100	92-100	50-90	18-60	<42	NP-22
PrA-------------- Persanti	0-7	Loam-------------	SM, ML	A-4	100	95-100	80-98	40-70	<35	NP-7
	7-49	Clay, silty clay	CL, CH	A-6, A-7	100	98-100	90-100	65-96	35-80	12-46
	49-60	Clay, clay loam, silty clay loam.	CL, ML, CH, MH	A-4, A-6, A-7	100	98-100	90-100	60-90	30-55	8-25
Qz--------------- Quartzipsamments	0-60	Sand-------------	SP, SP-SM, SM	A-2-4, A-3, A-1-b	75-100	70-100	30-100	1-25	---	NP
Ra--------------- Rains	0-6	Sandy loam-------	SM, ML	A-2, A-4	100	95-100	50-85	25-56	<35	NP-10
	6-58	Fine sandy loam, sandy clay loam, sandy loam.	SC, SC-SM, CL, CL-ML	A-2, A-4, A-6	100	95-100	55-98	30-70	18-40	4-20
	58-65	Sandy clay loam, clay loam, sandy clay.	SC, SC-SM, CL, CL-ML	A-4, A-6, A-7	100	98-100	60-98	36-72	18-45	4-28
Rv--------------- Riverview	0-11	Fine sandy loam	ML, SM, CL-ML, SC-SM	A-2, A-4	95-100	90-100	85-95	30-60	<20	NP-7
	11-36	Sandy clay loam, silty clay loam, loam.	CL, ML, CL-ML	A-4, A-6	100	100	90-100	60-95	20-40	3-20
	36-72	Loamy fine sand, sandy loam, sand.	SM, SC-SM	A-2, A-4	100	100	50-95	15-45	<20	NP-7
Sm--------------- Smithboro	0-5	Silt loam--------	ML, CL, CL-ML	A-4	100	100	95-100	70-90	<35	NP-10
	5-65	Clay, clay loam, silty clay.	CL, ML, CH, MH	A-6, A-7, A-4	100	100	94-100	70-95	24-60	9-32

See footnote at end of table.

Table 14.—Engineering Index Properties—Continued

Soil name and map symbol	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
TbB-------------- Tarboro	0-7	Sand-------------	SM, SP-SM, SW-SM	A-2, A-3, A-1	95-100	95-100	40-99	8-35	---	NP
	7-80	Sand, coarse sand, loamy sand.	SP, SP-SM, SW-SM, SM	A-2, A-3, A-1	95-100	90-100	45-100	3-15	---	NP
TrB, TrC--------- Troup	0-58	Sand-------------	SM, SP-SM	A-2	95-100	90-100	50-75	10-30	---	NP
	58-80	Sandy clay loam, sandy loam, fine sandy loam.	SC, SC-SM, CL-ML, CL	A-4, A-2, A-6	95-100	90-100	60-90	24-55	19-40	4-20
UgB, UgC--------- Uchee	0-25	Gravelly sand----	SM	A-2	75-95	60-85	50-70	13-30	---	NP
	25-35	Sandy loam, sandy clay loam.	SC, SC-SM	A-2, A-4, A-6	90-100	80-100	50-80	25-50	20-40	6-20
	35-57	Sandy clay loam, sandy clay, clay.	CH, CL, SC	A-7	90-100	80-100	65-90	40-70	41-70	18-38
	57-65	Sandy loam, sandy clay loam, sandy clay.	CH, CL, SC	A-6, A-7, A-2-6	85-100	80-100	50-80	30-65	35-65	15-35
UhB, UhC--------- Uchee	0-25	Sand-------------	SM	A-2, A-1-b	90-100	80-100	40-70	15-30	---	NP
	25-35	Sandy loam, sandy clay loam.	SC, SC-SM	A-2, A-4, A-6	90-100	80-100	50-80	25-50	20-40	6-20
	35-57	Sandy clay loam, sandy clay, clay.	CH, CL, SC	A-7	90-100	80-100	65-90	40-70	41-70	18-38
	57-65	Sandy loam, sandy clay loam, sandy clay.	CH, CL, SC	A-6, A-7, A-2-6	85-100	80-100	50-80	30-65	35-65	15-35
Ur--------------- Udorthents	0-60	Sandy loam-------	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6, A-7	95-100	90-100	70-98	30-90	20-45	4-25
WaB-------------- Wagram	0-30	Sand-------------	SP-SM, SM	A-1, A-2, A-3	95-100	90-100	45-80	5-15	---	NP
	30-72	Sandy clay loam, sandy loam.	SC	A-2, A-4, A-6, A-7	100	98-100	60-95	31-49	21-41	8-25
WkA-------------- Wickham	0-8	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-4	95-100	90-100	70-100	45-80	<25	NP-7
	8-62	Sandy clay loam, clay loam, loam.	CL-ML, CL, SC, SM	A-2, A-4, A-6, A-7-6	95-100	90-100	75-100	30-70	20-41	3-15
	62-72	Variable---------	---	---	---	---	---	---	---	---

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 15.—Physical and Chemical Properties of the Soils

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodibility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
AaB	0-23	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low	0.10	4	1	<1
Ailey	23-40	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24			
	40-56	18-32	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low	0.24			
	56-65	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low	0.15			
AeC, AeD	0-29	3-8	1.40-1.55	6.0-20	0.03-0.05	4.5-6.5	Low	0.10	4	1	<1
Ailey	29-33	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24			
	33-42	18-35	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low	0.24			
	42-65	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low	0.15			
AgD, AgE	0-22	5-10	1.35-1.45	6.0-20	0.03-0.05	4.5-6.5	Low	0.10	4	2	.5-1
Ailey	22-38	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low	0.24			
	38-47	18-35	1.70-1.80	0.06-0.2	0.06-0.10	4.5-5.5	Low	0.20			
	47-65	15-30	1.80-1.95	0.06-0.2	0.04-0.08	4.5-5.5	Low	0.15			
AhB	0-9	1-10	1.60-1.75	6.0-20	0.05-0.09	3.6-6.0	Low	0.10	5	1	.5-3
Alaga	9-80	2-12	1.60-1.75	6.0-20	0.05-0.09	3.6-6.0	Low	0.10			
ApB, ApC	0-6	1-12	1.35-1.55	2.0-6.0	0.05-0.10	4.5-6.5	Low	0.10	5	1	0-2
Alpin	6-40	1-7	1.40-1.55	6.0-20	0.03-0.09	4.5-6.5	Low	0.10			
	40-80	5-8	1.45-1.65	2.0-6.0	0.06-0.09	4.5-6.5	Low	0.10			
AuB	0-25	2-10	1.60-1.70	>6.0	0.04-0.09	4.5-6.5	Low	0.10	5	2	.5-1
Autryville	25-37	10-25	1.40-1.60	2.0-6.0	0.08-0.13	4.5-5.5	Low	0.10			
	37-50	2-8	1.60-1.70	>6.0	0.03-0.08	4.5-5.5	Low	0.10			
	50-65	10-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.17			
BaD, BaF	0-6	10-27	1.20-1.45	0.6-2.0	0.16-0.20	3.6-6.5	Low	0.32	2	5	1-3
Badin	6-31	35-55	1.30-1.50	0.6-2.0	0.14-0.19	3.6-5.5	Moderate	0.24			
	31-60	---	---	---	---	---	-------------	----			
BnB, BnC	0-70	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	Low	0.10	5	1	.5-1
Blanton	70-80	12-40	1.60-1.70	0.2-2.0	0.10-0.15	4.5-5.5	Low	0.20			
BoB	0-24	2-8	1.30-1.70	6.0-20	0.04-0.08	4.5-6.0	Low	0.10	5	1	.5-2
Bonneau	24-51	13-35	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low	0.20			
	51-70	15-40	1.40-1.60	0.6-2.0	0.10-0.16	4.5-5.5	Low	0.20			
By	0-19	15-35	1.20-1.50	0.6-2.0	0.15-0.20	3.6-5.5	Low	0.28	5	6	2-9
Byars	19-32	35-60	1.30-1.60	0.06-0.2	0.14-0.18	3.6-5.5	Moderate	0.32			
	32-60	35-60	1.30-1.60	0.06-0.2	0.14-0.18	3.6-5.5	Moderate	0.32			
CaB, CaC, CaD	0-26	1-4	1.60-1.70	6.0-20	0.02-0.06	3.6-6.0	Low	0.10	5	1	.5-1
Candor	26-38	6-12	1.55-1.70	6.0-20	0.06-0.10	3.6-5.5	Low	0.10			
	38-58	1-4	1.60-1.70	6.0-20	0.02-0.05	3.6-5.5	Low	0.10			
	58-70	10-35	1.35-1.60	0.6-2.0	0.12-0.16	3.6-5.5	Low	0.20			
CdB	0-9	1-4	1.60-1.70	6.0-20	0.02-0.06	3.6-6.0	Low	0.10	5	1	.5-1
Candor	9-43	6-12	1.55-1.70	6.0-20	0.06-0.10	3.6-5.5	Low	0.10			
	43-56	1-4	1.60-1.70	6.0-20	0.02-0.05	3.6-5.5	Low	0.10			
	56-70	10-35	1.35-1.60	0.6-2.0	0.12-0.16	3.6-5.5	Low	0.20			

See footnote at end of table.

Table 15.—Physical and Chemical Properties of the Soils—Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
Ce*:											
Chastain--------	0-12	15-35	1.20-1.40	0.2-0.6	0.12-0.18	4.5-6.0	Moderate-----	0.32	5	5	1-6
	12-54	35-60	1.30-1.50	0.06-0.2	0.12-0.16	4.5-6.0	Moderate-----	0.37			
	54-75	2-10	1.50-1.70	6.0-20	0.03-0.06	4.5-6.0	Low----------	0.10			
Chenneby--------	0-2	12-27	1.30-1.60	0.6-2.0	0.14-0.20	4.5-6.0	Low----------	0.37	5	5	.5-3
	2-54	12-35	1.30-1.50	0.6-2.0	0.15-0.20	4.5-6.0	Low----------	0.32			
	54-72	8-30	1.30-1.50	2.0-6.0	0.05-0.10	4.5-6.0	Low----------	0.24			
Ch--------------- Chenneby	0-2	12-27	1.30-1.60	0.6-2.0	0.14-0.20	4.5-6.0	Low----------	0.37	5	5	.5-3
	2-39	12-35	1.30-1.50	0.6-2.0	0.15-0.20	4.5-6.0	Low----------	0.32			
	39-72	8-30	1.30-1.50	2.0-6.0	0.05-0.10	4.5-6.0	Low----------	0.24			
CkA-------------- Chewacla	0-20	10-35	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low----------	0.28	5	5	1-4
	20-43	18-35	1.30-1.50	0.6-2.0	0.15-0.24	4.5-6.5	Low----------	0.32			
	43-66	---	---	---	---	---	-------------	----			
CmA, CmB--------- Clayham	0-4	8-25	1.45-1.65	2.0-6.0	0.11-0.16	4.5-6.5	Low----------	0.32	5	3	.5-2
	4-46	35-55	1.20-1.50	0.2-0.6	0.14-0.20	4.5-6.5	Low----------	0.37			
	46-65	8-35	1.30-1.50	0.6-2.0	0.10-0.20	5.1-6.5	Low----------	----			
CnB2------------- Clayham	0-5	20-85	1.30-1.60	0.2-6.0	0.12-0.20	4.5-6.5	Low----------	0.37	5	7	.2-1
	5-55	35-55	1.20-1.50	0.2-0.6	0.14-0.20	4.5-6.5	Low----------	0.37			
	55-65	8-35	1.30-1.50	0.6-2.0	0.10-0.20	5.1-6.5	Low----------	----			
CoC-------------- Cowarts	0-9	3-10	1.25-1.60	6.0-20	0.04-0.08	4.5-5.5	Low----------	0.10	4	2	.5-2
	9-22	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	22-72	18-35	1.45-1.70	0.06-0.6	0.08-0.12	4.5-5.5	Low----------	0.24			
CoD-------------- Cowarts	0-5	3-10	1.25-1.60	6.0-20	0.04-0.08	4.5-5.5	Low----------	0.10	4	2	.5-2
	5-9	10-30	1.30-1.50	0.6-2.0	0.10-0.14	4.5-5.5	Low----------	0.28			
	9-22	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	22-72	18-35	1.45-1.70	0.06-0.6	0.08-0.12	4.5-5.5	Low----------	0.24			
CwC, CwD--------- Cowarts	0-9	3-10	1.30-1.70	2.0-6.0	0.06-0.10	4.5-5.5	Low----------	0.15	4	2	.5-2
	9-22	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	22-72	18-35	1.45-1.75	0.06-0.6	0.10-0.14	4.5-5.5	Low----------	0.24			
CwE-------------- Cowarts	0-9	3-10	1.25-1.60	6.0-20	0.04-0.08	4.5-5.5	Low----------	0.10	4	2	.5-2
	9-22	25-40	1.30-1.50	0.2-2.0	0.10-0.16	4.5-5.5	Low----------	0.28			
	22-72	18-35	1.45-1.70	0.06-0.6	0.08-0.12	4.5-5.5	Low----------	0.24			
Cx--------------- Coxville	0-6	5-27	1.45-1.65	0.6-2.0	0.12-0.17	3.6-5.5	Low----------	0.24	5	3	2-4
	6-72	35-60	1.25-1.45	0.2-0.6	0.14-0.18	3.6-5.5	Moderate-----	0.32			
EmA, EmB--------- Emporia	0-11	5-10	1.30-1.40	6.0-20	0.05-0.10	4.5-6.0	Low----------	0.15	5	2	.5-2
	11-37	18-35	1.35-1.45	0.2-2.0	0.10-0.18	4.5-6.0	Low----------	0.28			
	37-45	21-40	1.45-1.60	0.06-0.6	0.10-0.16	4.5-6.0	Moderate-----	0.20			
	45-60	5-40	1.45-1.60	0.06-2.0	0.08-0.18	4.5-6.0	Moderate-----	0.20			
EmB2------------- Emporia	0-3	7-18	1.30-1.40	2.0-6.0	0.10-0.17	4.5-6.0	Low----------	0.28	5	3	.5-2
	3-40	18-35	1.35-1.45	0.2-2.0	0.10-0.18	4.5-6.0	Low----------	0.28			
	40-48	21-40	1.45-1.60	0.06-0.6	0.10-0.16	4.5-6.0	Moderate-----	0.20			
	48-60	5-40	1.45-1.60	0.06-2.0	0.08-0.18	4.5-6.0	Moderate-----	0.20			

See footnote at end of table.

Table 15.—Physical and Chemical Properties of the Soils—Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
EuA	0-5	3-11	1.45-1.70	2.0-6.0	0.06-0.11	4.5-5.5	Low	0.15	5	2	.5-2
Eunola	5-20	18-35	1.35-1.65	0.6-2.0	0.12-0.17	4.5-5.5	Low	0.28			
	20-42	18-45	1.30-1.60	0.6-2.0	0.12-0.16	4.5-5.5	Low	0.32			
	42-51	8-25	1.35-1.65	2.0-6.0	0.10-0.16	4.5-5.5	Low	0.24			
	51-60	2-11	1.45-1.75	6.0-20	0.02-0.06	4.5-5.5	Low	0.20			
FaA, FaB	0-6	2-10	1.45-1.65	6.0-20	0.06-0.09	4.5-5.5	Low	0.17	5	2	.5-1
Faceville	6-60	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Low	0.37			
FaB2	0-2	20-28	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low	0.32	5	5	.5-1
Faceville	2-60	35-55	1.25-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Low	0.37			
FxB	0-9	1-8	1.25-1.45	>6.0	0.05-0.10	4.5-6.0	Low	0.10	5	1	.5-2
Foxworth	9-58	1-8	1.40-1.55	>6.0	0.05-0.10	4.5-6.0	Low	0.10			
	58-80	1-6	1.45-1.65	>6.0	0.02-0.08	4.5-6.0	Low	0.10			
GoA	0-5	2-8	1.55-1.75	6.0-20	0.06-0.11	3.6-5.5	Low	0.17	5	2	.5-2
Goldsboro	5-19	18-30	1.30-1.50	0.6-2.0	0.11-0.17	3.6-5.5	Low	0.24			
	19-65	20-34	1.30-1.40	0.6-2.0	0.11-0.20	3.6-5.5	Low	0.24			
HnA	0-6	15-35	1.45-1.70	2.0-6.0	0.10-0.15	3.6-6.0	Low	0.24	5	4	.1-2
Hornsville	6-47	35-60	1.55-1.70	0.2-0.6	0.12-0.16	3.6-6.0	Low	0.28			
	47-68	12-35	1.55-1.70	0.6-2.0	0.10-0.14	3.6-6.0	Low	0.24			
HnB	0-6	6-15	1.45-1.65	6.0-20	0.08-0.12	3.6-6.0	Low	0.20	5	3	1-4
Hornsville	6-47	35-60	1.55-1.70	0.2-0.6	0.12-0.16	3.6-6.0	Low	0.28			
	47-68	12-35	1.55-1.70	0.6-2.0	0.10-0.14	3.6-6.0	Low	0.24			
HnB2	0-6	15-35	1.45-1.70	2.0-6.0	0.10-0.15	3.6-6.0	Low	0.24	5	4	.1-2
Hornsville	6-52	35-60	1.55-1.70	0.2-0.6	0.12-0.16	3.6-6.0	Low	0.28			
	52-62	12-35	1.55-1.70	0.6-2.0	0.10-0.14	3.6-6.0	Low	0.24			
Jo	0-23	5-18	1.30-1.55	2.0-6.0	0.10-0.20	4.5-5.5	Low	0.20	5	5	3-8
Johnston	23-40	2-12	1.55-1.65	6.0-20	0.02-0.07	4.5-5.5	Low	0.17			
	40-60	5-20	1.45-1.65	6.0-20	0.06-0.12	4.5-5.5	Low	0.17			
Kn	0-3	5-27	1.30-1.50	0.6-2.0	0.14-0.20	4.5-6.0	Low	0.37	5	5	2-5
Kinston	3-42	18-35	1.30-1.50	0.6-2.0	0.14-0.18	4.5-5.5	Low	0.32			
	42-60	---	---	---	---	---	-------------	----			
Le	0-3	1-5	1.30-1.45	6.0-20	0.05-0.15	3.6-6.5	Low	0.10	5	1	.5-4
Leon	3-28	<3	1.40-1.60	6.0-20	0.02-0.05	3.6-6.5	Low	0.10			
	28-48	2-8	1.25-1.65	0.6-6.0	0.15-0.30	3.6-6.5	Low	0.15			
	48-60	1-4	1.50-1.65	2.0-20	0.05-0.10	3.6-6.5	Low	0.10			
LuB	0-22	1-10	1.30-1.70	6.0-20	0.05-0.10	5.1-6.0	Low	0.10	5	1	.5-1
Lucy	22-39	10-30	1.40-1.60	2.0-6.0	0.10-0.12	4.5-5.5	Low	0.24			
	39-67	20-45	1.40-1.60	0.6-2.0	0.12-0.14	4.5-5.5	Low	0.28			
Ly	0-11	5-20	1.30-1.60	2.0-6.0	0.09-0.13	3.6-5.5	Low	0.20	5	3	.5-5
Lynchburg	11-63	18-35	1.30-1.50	0.6-2.0	0.12-0.16	3.6-5.5	Low	0.20			
MaA, MaB	0-7	5-20	1.30-1.60	2.0-6.0	0.09-0.14	5.1-6.5	Low	0.20	5	3	.5-2
Marlboro	7-53	35-65	1.20-1.50	0.6-2.0	0.14-0.18	4.5-6.0	Low	0.20			
	53-70	30-60	1.20-1.50	0.6-2.0	0.12-0.18	4.5-6.0	Low	0.20			

See footnote at end of table.

Table 15.—Physical and Chemical Properties of the Soils—Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
Mc---------------- McColl	0-9	15-35	1.20-1.50	0.6-2.0	0.12-0.16	4.5-7.3	Low----------	0.24	5	5	1-8
	9-17	35-60	1.30-1.50	0.2-0.6	0.13-0.17	4.5-5.5	Low----------	0.24			
	17-37	25-45	1.75-1.95	0.06-0.2	0.07-0.11	4.5-5.5	Low----------	0.24			
	37-85	15-40	1.50-1.70	0.2-2.0	0.08-0.12	4.5-5.5	Low----------	0.32			
NaB--------------- Nankin	0-6	5-12	1.45-1.65	2.0-6.0	0.05-0.10	4.5-5.5	Low----------	0.17	3	2	.5-1
	6-10	15-35	1.55-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
	10-57	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24			
	57-65	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
NbB2, NbC2------- Nankin	0-5	7-20	1.45-1.55	2.0-6.0	0.08-0.12	4.5-5.5	Low----------	0.28	3	3	.5-1
	5-52	15-35	1.55-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
	52-62	35-50	1.30-1.70	0.2-0.6	0.11-0.16	4.5-5.5	Low----------	0.24			
NcA, NcB--------- Noboco	0-13	2-8	1.55-1.80	6.0-20	0.08-0.11	3.6-6.0	Low----------	0.10	5	2	.5-2
	13-38	18-35	1.45-1.75	0.6-2.0	0.11-0.14	3.6-5.5	Low----------	0.24			
	38-62	20-43	1.45-1.70	0.6-2.0	0.06-0.14	3.6-5.5	Low----------	0.24			
NcB2-------------- Noboco	0-3	5-18	1.50-1.80	2.0-6.0	0.13-0.15	3.6-6.0	Low----------	0.15	5	---	.5-2
	3-36	18-35	1.45-1.75	0.6-2.0	0.11-0.14	3.6-5.5	Low----------	0.24			
	36-60	20-43	1.45-1.70	0.6-2.0	0.06-0.14	3.6-5.5	Low----------	0.24			
NoA, NoB--------- Norfolk	0-15	2-8	1.55-1.70	6.0-20	0.06-0.11	3.6-6.0	Low----------	0.17	5	2	.5-2
	15-42	18-35	1.30-1.65	0.6-2.0	0.10-0.18	3.6-5.5	Low----------	0.24			
	42-72	20-43	1.20-1.65	0.6-2.0	0.12-0.18	3.6-5.5	Low----------	0.24			
NrB2-------------- Norfolk	0-3	5-18	1.45-1.65	2.0-6.0	0.10-0.15	3.6-6.0	Low----------	0.20	5	3	.5-2
	3-66	20-43	1.20-1.65	0.6-2.0	0.12-0.18	3.6-5.5	Low----------	0.24			
	66-72	---	---	---	---	---	-------------	----			
OcB--------------- Ocilla	0-23	3-10	1.45-1.65	2.0-20	0.05-0.07	4.5-5.5	Low----------	0.10	5	2	1-2
	23-42	15-35	1.55-1.70	0.6-2.0	0.09-0.12	4.5-5.5	Low----------	0.24			
	42-60	15-40	1.55-1.70	0.2-2.0	0.09-0.12	4.5-5.5	Low----------	0.24			
Og---------------- Ogeechee	0-9	5-10	1.35-1.45	0.6-2.0	0.10-0.14	4.5-5.5	Low----------	0.10	5	3	1-2
	9-42	20-35	1.55-1.65	0.6-2.0	0.08-0.14	4.5-5.5	Low----------	0.15			
	42-56	30-45	1.60-1.70	0.6-2.0	0.10-0.14	4.5-5.5	Low----------	0.15			
	56-72	15-30	1.55-1.65	0.6-2.0	0.10-0.14	4.5-6.0	Low----------	0.15			
OrA--------------- Orangeburg	0-17	4-10	1.35-1.55	2.0-6.0	0.06-0.09	4.5-6.0	Low----------	0.10	5	2	.5-1
	17-75	20-45	1.60-1.75	0.6-2.0	0.11-0.14	4.5-5.5	Low----------	0.24			
Pa---------------- Pamlico	0-42	---	0.20-0.65	0.6-6.0	0.24-0.40	3.6-5.5	Low----------	----	---	2	20-60
	42-60	5-10	1.60-1.75	6.0-20	0.10-0.20	3.6-5.5	Low----------	0.10			
Pe---------------- Paxville	0-14	8-25	1.30-1.40	2.0-6.0	0.12-0.16	3.6-6.5	Low----------	0.20	5	3	2-10
	14-38	8-35	1.20-1.50	0.6-2.0	0.12-0.18	3.6-5.5	Low----------	0.15			
	38-45	8-18	1.30-1.50	6.0-20	0.05-0.10	3.6-5.5	Low----------	0.10			
	45-60	2-12	1.30-1.60	6.0-20	0.05-0.08	3.6-5.5	Low----------	0.10			
PnA, PnB--------- Pelion	0-14	2-10	1.35-1.75	>6.0	0.03-0.06	3.6-6.5	Low----------	0.15	3	2	.5-2
	14-24	18-35	1.40-1.60	0.6-2.0	0.12-0.16	3.6-5.5	Low----------	0.17			
	24-44	18-50	1.40-1.75	0.06-0.6	0.06-0.10	3.6-5.5	Low----------	0.20			
	44-63	10-40	1.40-1.60	0.6-2.0	0.06-0.10	3.6-5.5	Low----------	0.15			
PrA--------------- Persanti	0-7	10-20	1.30-1.60	0.2-2.0	0.11-0.15	4.5-6.5	Low----------	0.28	5	3	.5-3
	7-49	40-70	1.20-1.50	0.06-0.2	0.12-0.15	3.6-5.5	Moderate-----	0.20			
	49-60	30-60	1.20-1.50	0.06-0.2	0.12-0.15	3.6-5.5	Moderate-----	0.20			

See footnote at end of table.

Table 15.—Physical and Chemical Properties of the Soils—Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors K	Erosion factors T	Wind erodi-bility group	Organic matter
	In	Pct	g/cc	In/hr	In/in	pH					Pct
Qz---------------- Quartzipsamments	0-60	1-14	1.35-1.60	>6.0	0.02-0.11	4.5-7.3	Low----------	0.10	5	2	<1
Ra---------------- Rains	0-6	5-20	1.30-1.60	2.0-6.0	0.10-0.14	3.6-6.5	Low----------	0.20	5	3	1-6
	6-58	18-35	1.30-1.60	0.6-2.0	0.11-0.15	3.6-5.5	Low----------	0.24			
	58-65	18-40	1.30-1.50	0.6-2.0	0.10-0.15	3.6-5.5	Low----------	0.28			
Rv---------------- Riverview	0-11	4-18	1.30-1.60	0.6-2.0	0.12-0.18	4.5-6.5	Low----------	0.24	5	3	.5-2
	11-36	18-35	1.20-1.40	0.6-2.0	0.15-0.22	4.5-6.0	Low----------	0.24			
	36-72	4-18	1.20-1.50	2.0-6.0	0.07-0.11	4.5-6.0	Low----------	0.17			
Sm---------------- Smithboro	0-5	10-20	1.20-1.40	0.6-2.0	0.14-0.22	4.5-6.0	Low----------	0.37	5	5	.5-3
	5-65	35-60	1.30-1.60	0.06-0.2	0.14-0.18	3.6-5.5	Moderate-----	0.32			
TbB--------------- Tarboro	0-7	3-12	1.60-1.75	6.0-20	0.05-0.09	4.5-6.5	Low----------	0.10	5	2	.5-1
	7-80	2-7	1.60-1.75	>20	0.02-0.06	4.5-6.5	Low----------	0.10			
TrB, TrC---------- Troup	0-58	1-10	1.30-1.70	6.0-20	0.05-0.10	4.5-6.0	Very low-----	0.10	5	1	<1
	58-80	15-35	1.40-1.60	0.6-2.0	0.10-0.13	4.5-5.5	Low----------	0.20			
UgB, UgC---------- Uchee	0-25	3-10	1.25-1.60	6.0-20	0.04-0.08	4.5-5.5	Low----------	0.10	5	2	.2-3
	25-35	8-30	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
	35-57	25-50	1.40-1.60	0.2-0.6	0.10-0.16	4.5-5.5	Moderate-----	0.28			
	57-65	15-40	1.40-1.60	0.2-2.0	0.10-0.16	4.5-5.5	Moderate-----	0.28			
UhB, UhC---------- Uchee	0-25	3-10	1.30-1.70	6.0-20	0.05-0.10	4.5-5.5	Low----------	0.10	5	2	.2-3
	25-35	8-30	1.40-1.60	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24			
	35-57	25-50	1.40-1.60	0.2-0.6	0.10-0.16	4.5-5.5	Moderate-----	0.28			
	57-65	15-40	1.40-1.60	0.2-2.0	0.10-0.16	4.5-5.5	Moderate-----	0.28			
Ur---------------- Udorthents	0-60	10-50	1.30-1.65	0.06-2.0	0.10-0.17	4.5-7.8	Moderate-----	0.28	5	5	0-1
WaB--------------- Wagram	0-30	1-7	1.60-1.75	6.0-20	0.03-0.07	4.5-6.0	Low----------	0.10	5	1	.5-2
	30-72	10-35	1.35-1.60	0.6-2.0	0.12-0.16	4.5-6.0	Low----------	0.20			
WkA--------------- Wickham	0-8	8-15	1.45-1.65	2.0-6.0	0.11-0.16	4.5-6.0	Low----------	0.24	5	3	.5-2
	8-62	18-35	1.30-1.50	0.6-2.0	0.12-0.17	4.5-6.0	Low----------	0.24			
	62-72	---	---	---	---	---	-------------	----			

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 16.—Soil and Water Features

("Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
AaB--------------- Ailey	B	None--------	---	---	4.0-6.0	Perched	Jan-Apr	---	---	Moderate	Moderate.
AeC, AeD---------- Ailey	B	None--------	---	---	>6.0	---	---	---	---	Moderate	Moderate.
AgD, AgE---------- Ailey	B	None--------	---	---	>6.0	---	---	---	---	Moderate	Moderate.
AhB--------------- Alaga	A	None--------	---	---	>6.0	---	---	---	---	Low------	Moderate.
ApB, ApC---------- Alpin	A	None--------	---	---	>6.0	---	---	---	---	Low------	High.
AuB--------------- Autryville	A	None--------	---	---	4.0-6.0	Apparent	Jan-Apr	---	---	Low------	High.
BaD, BaF---------- Badin	B	None--------	---	---	>6.0	---	---	---	---	High-----	High.
BnB, BnC---------- Blanton	A	None--------	---	---	4.0-6.0	Perched	Mar-Aug	---	---	High-----	High.
BoB--------------- Bonneau	A	None--------	---	---	3.5-5.0	Apparent	Dec-Mar	---	---	Low------	High.
By---------------- Byars	D	None--------	---	---	+1-1.0	Apparent	Nov-Apr	---	---	High-----	High.
CaB, CaC, CaD----- Candor	A	None--------	---	---	>6.0	---	---	---	---	Low------	High.
CdB--------------- Candor	A	None--------	---	---	4.0-6.0	Apparent	Dec-Mar	---	---	Low------	High.
Ce*:											
Chastain----------	D	Frequent----	Very long	Dec-Apr	0-1.0	Apparent	Nov-May	---	---	High-----	High.
Chenneby---------	C	Frequent----	Very brief to long.	Dec-Apr	1.0-2.5	Apparent	Jan-Mar	---	---	High-----	Moderate.
Ch---------------- Chenneby	C	Occasional	Very brief to long.	Dec-Apr	1.0-2.5	Apparent	Jan-Mar	---	---	High-----	Moderate.
CkA--------------- Chewacla	C	Frequent----	Brief to long.	Nov-Apr	0.5-2.0	Apparent	Nov-Apr	---	---	High-----	Moderate.
CmA, CmB, CnB2---- Clayham	B	None--------	---	---	>6.0	---	---	---	---	Moderate	High.
CoC, CoD, CwC, CwD, CwE--------- Cowarts	C	None--------	---	---	>6.0	---	---	---	---	Moderate	Moderate.

See footnote at end of table.

Table 16.—Soil and Water Features—Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Subsidence		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Initial	Total	Uncoated steel	Concrete
					Ft			In	In		
Cx: Coxville	D	None	---	---	0-1.0	Apparent	Nov-Apr	---	---	High	High.
EmA, EmB, EmB2: Emporia	C	None	---	---	3.0-4.5	Perched	Nov-Apr	---	---	Moderate	High.
EuA: Eunola	C	None	---	---	1.5-2.5	Apparent	Nov-Mar	---	---	Low	High.
FaA, FaB, FaB2: Faceville	B	None	---	---	>6.0	---	---	---	---	Low	Moderate.
FxB: Foxworth	A	None	---	---	4.0-6.0	Apparent	Jun-Oct	---	---	Low	Moderate.
GoA: Goldsboro	B	None	---	---	2.0-3.0	Apparent	Dec-Apr	---	---	Moderate	High.
HnA, HnB, HnB2: Hornsville	C	None	---	---	2.5-3.5	Apparent	Dec-Apr	---	---	High	High.
Jo: Johnston	D	Frequent	Brief to long.	Nov-Jul	+1-1.5	Apparent	Nov-Jun	---	---	High	High.
Kn: Kinston	B/D	Frequent	Brief to long.	Nov-Jun	0-1.0	Apparent	Nov-Jun	---	---	High	High.
Le: Leon	B/D	None	---	---	0.5-1.5	Apparent	Mar-Sep	---	---	High	High.
LuB: Lucy	A	None	---	---	>6.0	---	---	---	---	Low	High.
Ly: Lynchburg	C	None	---	---	0.5-1.5	Apparent	Nov-Apr	---	---	High	High.
MaA, MaB: Marlboro	B	None	---	---	4.0-6.0	Apparent	Dec-Mar	---	---	High	High.
Mc: McColl	D	None	---	---	+1-1.0	Apparent	Nov-Apr	---	---	High	High.
NaB, NbB2, NbC2: Nankin	C	None	---	---	>6.0	---	---	---	---	High	High.
NcA, NcB, NcB2: Noboco	B	None	---	---	2.5-4.0	Apparent	Dec-Mar	---	---	Moderate	High.
NoA, NoB, NrB2: Norfolk	B	None	---	---	4.0-6.0	Apparent	Jan-Mar	---	---	Moderate	High.
OcB: Ocilla	C	None	---	---	1.0-2.5	Apparent	Dec-Apr	---	---	High	Moderate.
Og: Ogeechee	B/D	None	---	---	0-1.0	Apparent	Dec-May	---	---	High	High.
OrA: Orangeburg	B	None	---	---	>6.0	---	---	---	---	Moderate	Moderate.

See footnote at end of table.

Table 16.—Soil and Water Features—Continued

Soil name and map symbol	Hydro-logic group	Flooding: Frequency	Flooding: Duration	Flooding: Months	High water table: Depth	High water table: Kind	High water table: Months	Subsidence: Initial	Subsidence: Total	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
					Ft			In	In		
Pa---------------- Pamlico	D	Frequent----	Brief to long.	Jan-Dec	+1-0	Apparent	Jan-Dec	4-12	10-29	High-----	High.
Pe---------------- Paxville	B/D	Rare--------	---	---	+1-1.0	Apparent	Nov-Apr	---	---	High-----	High.
PnA, PnB---------- Pelion	B/D	None--------	---	---	1.0-2.5	Perched	Nov-Apr	---	---	High-----	High.
PrA--------------- Persanti	C	None--------	---	---	1.5-3.0	Apparent	Dec-Apr	---	---	High-----	High.
Qz---------------- Quartzipsamments	A	None--------	---	---	>6.0	---	---	---	---	Low------	High.
Ra---------------- Rains	B/D	None--------	---	---	0-1.0	Apparent	Nov-Apr	---	---	High-----	High.
Rv---------------- Riverview	B	Occasional	Brief-----	Dec-Mar	3.0-5.0	Apparent	Dec-Mar	---	---	Low------	Moderate.
Sm---------------- Smithboro	D	None--------	---	---	0.5-1.5	Apparent	Dec-Mar	---	---	High-----	High.
TbB--------------- Tarboro	A	Rare--------	---	---	>6.0	---	---	---	---	Low------	Moderate.
TrB, TrC---------- Troup	A	None--------	---	---	>6.0	---	---	---	---	Low------	Moderate.
UgB, UgC, UhB, UhC Uchee	A	None--------	---	---	3.5-5.0	Perched	Jan-Apr	---	---	Low------	High.
Ur---------------- Udorthents	B	None--------	---	---	>6.0	---	---	---	---	Moderate	High.
WaB--------------- Wagram	A	None--------	---	---	>6.0	---	---	---	---	Low------	High.
WkA--------------- Wickham	B	None--------	---	---	>6.0	---	---	---	---	Moderate	High.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 17.—Classification of the Soils

Soil name	Family or higher taxonomic class
Ailey	Loamy, siliceous, thermic Arenic Kanhapludults
Alaga	Thermic, coated Typic Quartzipsamments
Alpin	Thermic, coated Typic Quartzipsamments
Autryville	Loamy, siliceous, thermic Arenic Paleudults
Badin	Clayey, mixed, thermic Typic Hapludults
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Bonneau	Loamy, siliceous, thermic Arenic Paleudults
Byars	Clayey, kaolinitic, thermic Umbric Paleaquults
Candor	Sandy, siliceous, thermic Arenic Paleudults
Chastain	Fine, mixed, acid, thermic Typic Fluvaquents
Chenneby	Fine-silty, mixed, thermic Fluvaquentic Dystrochrepts
Chewacla	Fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts
Clayham	Clayey, kaolinitic, thermic Ultic Hapludalfs
Cowarts	Fine-loamy, siliceous, thermic Typic Kanhapludults
Coxville	Clayey, kaolinitic, thermic Typic Paleaquults
Emporia	Fine-loamy, siliceous, thermic Typic Hapludults
Eunola	Fine-loamy, siliceous, thermic Aquic Hapludults
Faceville	Clayey, kaolinitic, thermic Typic Kandiudults
Foxworth	Thermic, coated Typic Quartzipsamments
Goldsboro	Fine-loamy, siliceous, thermic Aquic Paleudults
Hornsville	Clayey, kaolinitic, thermic Aquic Hapludults
Johnston	Coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts
Kinston	Fine-loamy, siliceous, acid, thermic Typic Fluvaquents
Leon	Sandy, siliceous, thermic Aeric Alaquods
Lucy	Loamy, siliceous, thermic Arenic Kandiudults
Lynchburg	Fine-loamy, siliceous, thermic Aeric Paleaquults
Marlboro	Clayey, kaolinitic, thermic Typic Paleudults
McColl	Clayey, kaolinitic, thermic Typic Fragiaquults
Nankin	Clayey, kaolinitic, thermic Typic Kanhapludults
Noboco	Fine-loamy, siliceous, thermic Typic Paleudults
Norfolk	Fine-loamy, siliceous, thermic Typic Kandiudults
Ocilla	Loamy, siliceous, thermic Aquic Arenic Paleudults
Ogeechee	Fine-loamy, siliceous, thermic Typic Endoaquults
Orangeburg	Fine-loamy, siliceous, thermic Typic Kandiudults
Pamlico	Sandy or sandy-skeletal, siliceous, dysic, thermic Terric Medisaprists
Paxville	Fine-loamy, siliceous, thermic Typic Umbraquults
Pelion	Fine-loamy, siliceous, thermic Aquic Kanhapludults
Persanti	Clayey, kaolinitic, thermic Aquic Paleudults
Quartzipsamments	Quartzipsamments
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Riverview	Fine-loamy, mixed, thermic Fluventic Dystrochrepts
Smithboro	Clayey, kaolinitic, thermic Aeric Paleaquults
Tarboro	Mixed, thermic Typic Udipsamments
Troup	Loamy, siliceous, thermic Grossarenic Kandiudults
Uchee	Loamy, siliceous, thermic Arenic Hapludults
Udorthents	Udorthents
Wagram	Loamy, siliceous, thermic Arenic Kandiudults
Wickham	Fine-loamy, mixed, thermic Typic Hapludults

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INDEX TO MAP SHEETS
MARLBORO COUNTY, SOUTH CAROLINA

MILES
KILOMETERS
SCALE = 1:135000

SOIL LEGEND

SYMBOL	NAME
AaB	Ailey sand, moderately wet, 0 to 6 percent slopes
AeC	Ailey loamy sand, 6 to 10 percent slopes
AeD	Ailey loamy sand, 10 to 15 percent slopes
AgD	Ailey gravelly loamy sand, 6 to 15 percent slopes
AgE	Ailey gravelly loamy sand, 15 to 25 percent slopes
AhB	Alaga sand, 0 to 6 percent slopes
ApB	Alpin sand, 0 to 6 percent slopes
ApC	Alpin sand, 6 to 10 percent slopes
AuB	Autryville sand, 0 to 6 percent slopes
BaD	Badin silt loam, 2 to 15 percent slopes
BaF	Badin silt loam, 15 to 40 percent slopes
BnB	Blanton sand, 0 to 6 percent slopes
BnC	Blanton sand, 6 to 10 percent slopes
BoB	Bonneau sand, 0 to 4 percent slopes
By	Byars loam
CaB	Candor sand, 0 to 6 percent slopes
CaC	Candor sand, 6 to 10 percent slopes
CaD	Candor sand, 10 to 15 percent slopes
CdB	Candor sand, moderately wet, 0 to 6 percent slopes
Ce	Chastain-Chenneby complex, frequently flooded
Ch	Chenneby silt loam, occasionally flooded
CkA	Chewacla loam, 0 to 2 percent slopes, frequently flooded
CmA	Clayham loam, 0 to 2 percent slopes
CmB	Clayham loam, 2 to 6 percent slopes
CnB2	Clayham clay loam, 2 to 6 percent slopes, eroded
CoC	Cowarts loamy sand, 6 to 10 percent slopes
CoD	Cowarts loamy sand, 10 to 15 percent slopes
CwC	Cowarts gravelly loamy sand, 6 to 10 percent slopes
CwD	Cowarts gravelly loamy sand, 10 to 15 percent slopes
CwE	Cowarts gravelly loamy sand, 15 to 25 percent slopes
Cx	Coxville loam
EmA	Emporia loamy sand, 0 to 2 percent slopes
EmB	Emporia loamy sand, 2 to 6 percent slopes
EmB2	Emporia sandy loam, 2 to 6 percent slopes, eroded
EuA	Eunola loamy sand, 0 to 2 percent slopes
FaA	Faceville loamy sand, 0 to 2 percent slopes
FaB	Faceville loamy sand, 2 to 6 percent slopes
FaB2	Faceville sandy clay loam, 2 to 6 percent slopes, eroded
FxB	Foxworth sand, 0 to 6 percent slopes
GoA	Goldsboro loamy sand, 0 to 2 percent slopes
HnA	Hornsville loam, 0 to 2 percent slopes
HnB	Hornsville loam, 2 to 6 percent slopes
HnB2	Hornsville sandy clay loam, 2 to 6 percent slopes, eroded
Jo	Johnston mucky loam, frequently flooded
Kn	Kinston loam, frequently flooded
Le	Leon sand
LuB	Lucy sand, 0 to 6 percent slopes
Ly	Lynchburg sandy loam
MaA	Marlboro fine sandy loam, moderately wet, 0 to 2 percent slopes
MaB	Marlboro fine sandy loam, moderately wet, 2 to 6 percent slopes
Mc	McColl loam
NaB	Nankin loamy fine sand, 2 to 6 percent slopes
NbB2	Nankin sandy clay loam, 2 to 6 percent slopes, eroded
NbC2	Nankin sandy clay loam, 6 to 10 percent slopes, eroded
NcA	Noboco loamy sand, 0 to 2 percent slopes
NcB	Noboco loamy sand, 2 to 6 percent slopes
NcB2	Noboco sandy loam, 2 to 6 percent slopes, eroded
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
NrB2	Norfolk sandy clay loam, 2 to 6 percent slopes, eroded
OcB	Ocilla sand, 0 to 4 percent slopes
Og	Ogeechee sandy loam
OrA	Orangeburg loamy sand, 0 to 2 percent slopes
Pa	Pamlico muck, frequently flooded
Pe	Paxville fine sandy loam
PnA	Pelion loamy sand, 0 to 2 percent slopes
PnB	Pelion loamy sand, 2 to 6 percent slopes
PrA	Persanti loam, 0 to 2 percent slopes
Qz	Quartzipsamments, sloping
Ra	Rains sandy loam
Rv	Riverview fine sandy loam, occasionally flooded
Sm	Smithboro silt loam
TbB	Tarboro sand, 0 to 4 percent slopes
TrB	Troup sand, 0 to 6 percent slopes
TrC	Troup sand, 6 to 10 percent slopes
UgB	Uchee sand, 0 to 6 percent slopes
UgC	Uchee sand, 6 to 10 percent slopes
UhB	Uchee gravelly sand, 0 to 6 percent slopes
UhC	Uchee gravelly sand, 6 to 10 percent slopes
Ur	Udorthents
W	Water
WaB	Wagram sand, 0 to 6 percent slopes
WkA	Wickham fine sandy loam, 0 to 2 percent slopes

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- County or parish
- Reservation (national forest or park, state forest or park)

STATE COORDINATE TICK
1 890 000 FEET

GEOGRAPHIC COORDINATE TICK

ROAD EMBLEM & DESIGNATIONS

Interstate	173	79 345
Federal	287	410 224
State	173	52 347
County, farm or ranch	1283	

HYDROGRAPHIC FEATURES

STREAMS

Perennial, single line	Label only
Intermittent	Label only

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS AaB BnB

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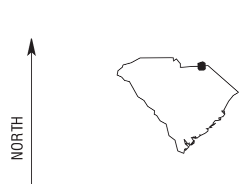
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



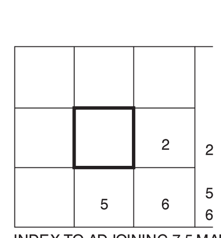
QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS



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MORVEN EAST, SOUTH CAROLINA

7.5 MINUTE SERIES
SHEET NUMBER 1 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARLBORO COUNTY, SOUTH CAROLINA
DIGGS QUADRANGLE
SHEET NUMBER 2 OF 18

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

1		3
5	6	7

1 MORVEN EAST
3 GHIO
5 CHERAW
6 WALLACE
7 BENNETTSVILLE NORTH

INDEX TO ADJOINING 7.5 MAPS

DIGGS, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 18

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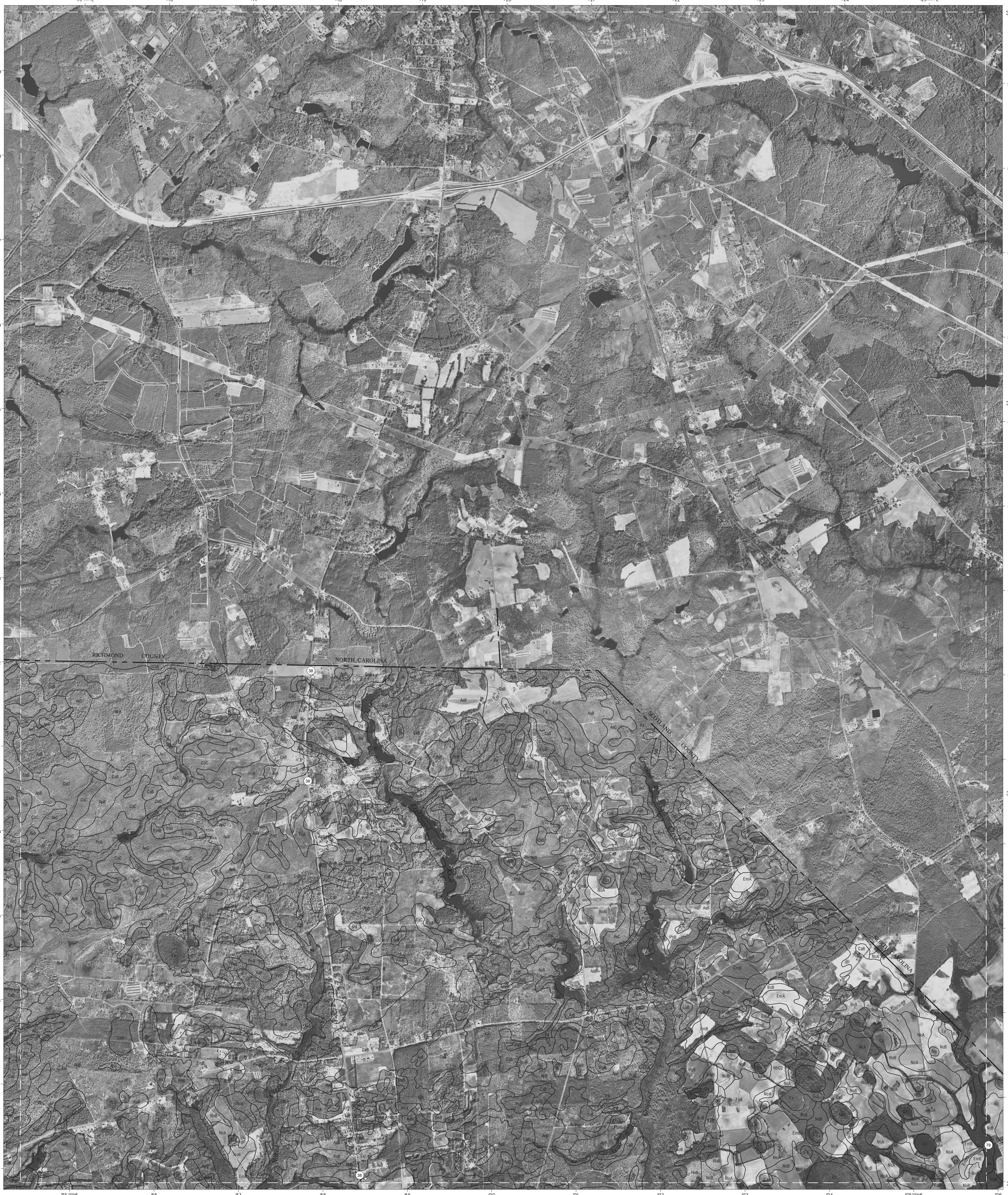

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

2 DIGGS
4 GIBSON
6 WALLACE
7 BENNETTSVILLE NORTH
8 MCCOLL

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GHIO, SOUTH CAROLINA
7.5 MINUTE SERIES
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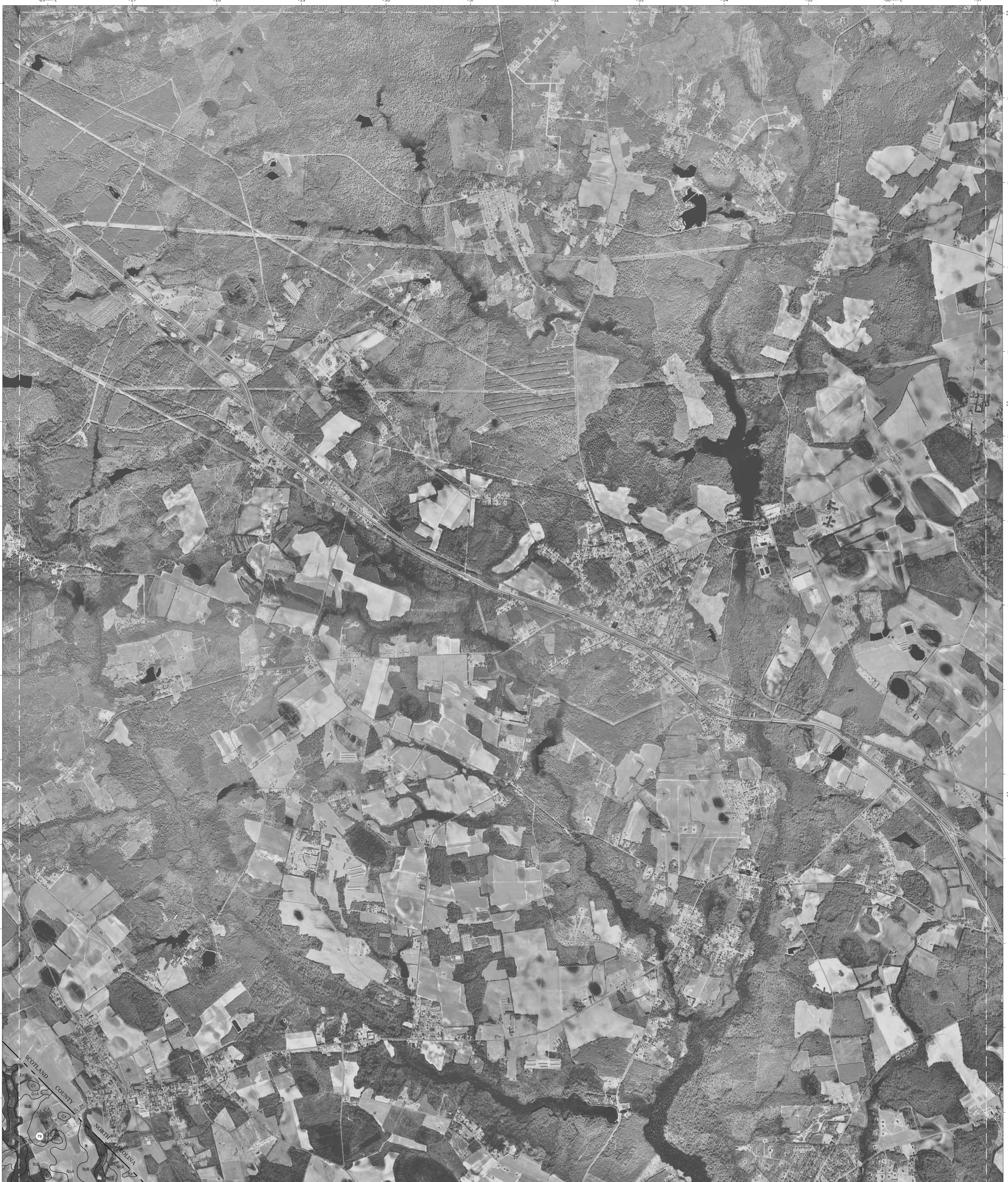
MARLBORO COUNTY, SOUTH CAROLINA
GIBSON QUADRANGLE
SHEET NUMBER 4 OF 18



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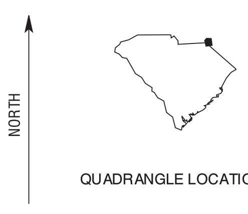

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

3 GHIO
7 BENNETTSVILLE NORTH
8 MCCOLL
9 JOHNS

GIBSON, SOUTH CAROLINA

7.5 MINUTE SERIES
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UNITED STATES
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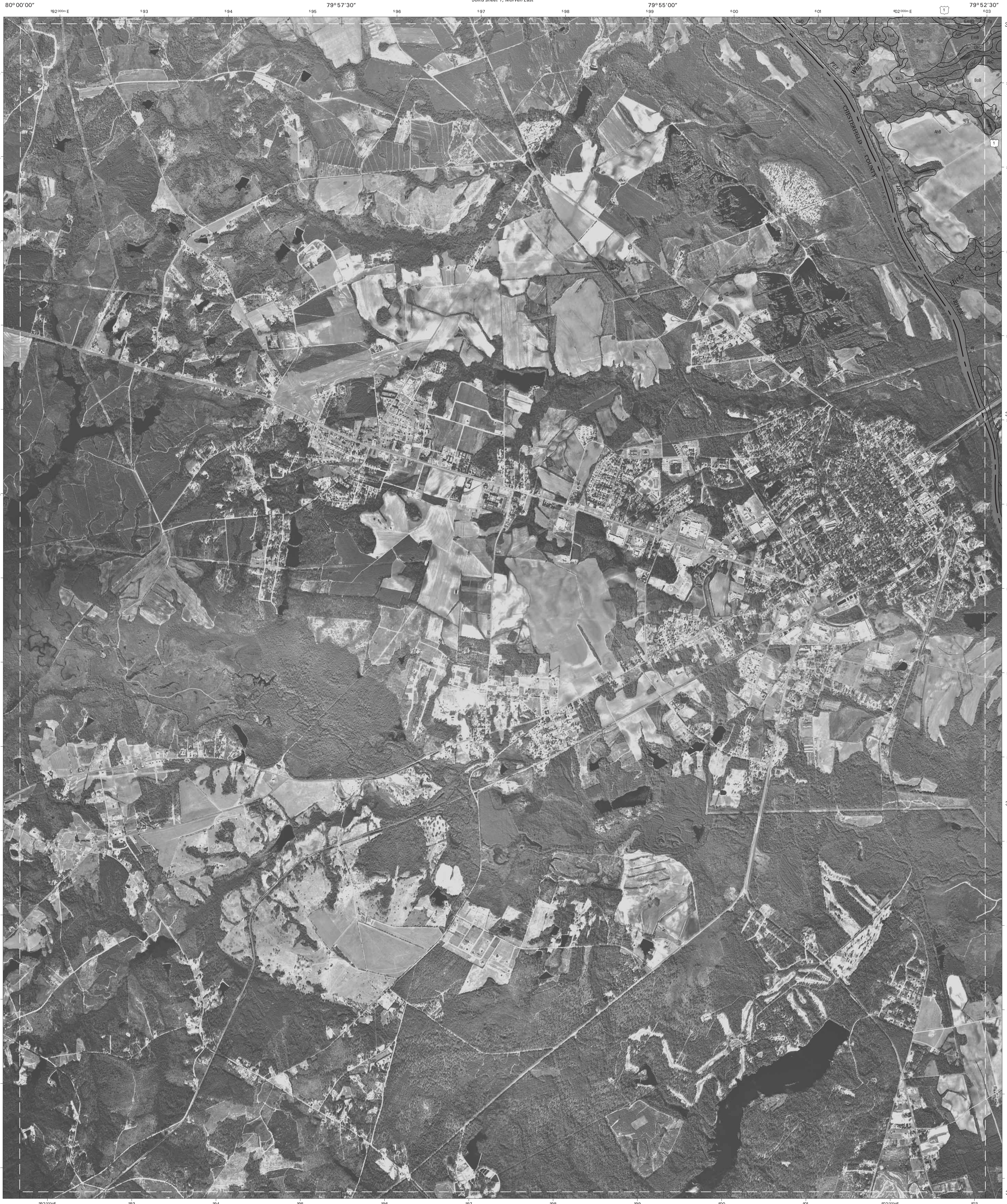
MARLBORO COUNTY, SOUTH CAROLINA
CHERAW QUADRANGLE
SHEET NUMBER 5 OF 18

Joins sheet 1, Morven East

Joins sheet 2, Diggs

80° 00′00″ 79° 57′30″ 79° 55′00″ 79° 52′30″

34° 45′00″



34° 42′30″

34° 40′00″

34° 37′30″

Joins sheet 6, Wallace

Joins sheet 10, Society Hill

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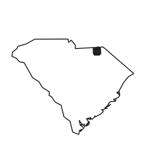
NORTH



QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

1 MORVEN EAST
2 DIGGS
6 WALLACE
10 SOCIETY HILL

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CHERAW, SOUTH CAROLINA
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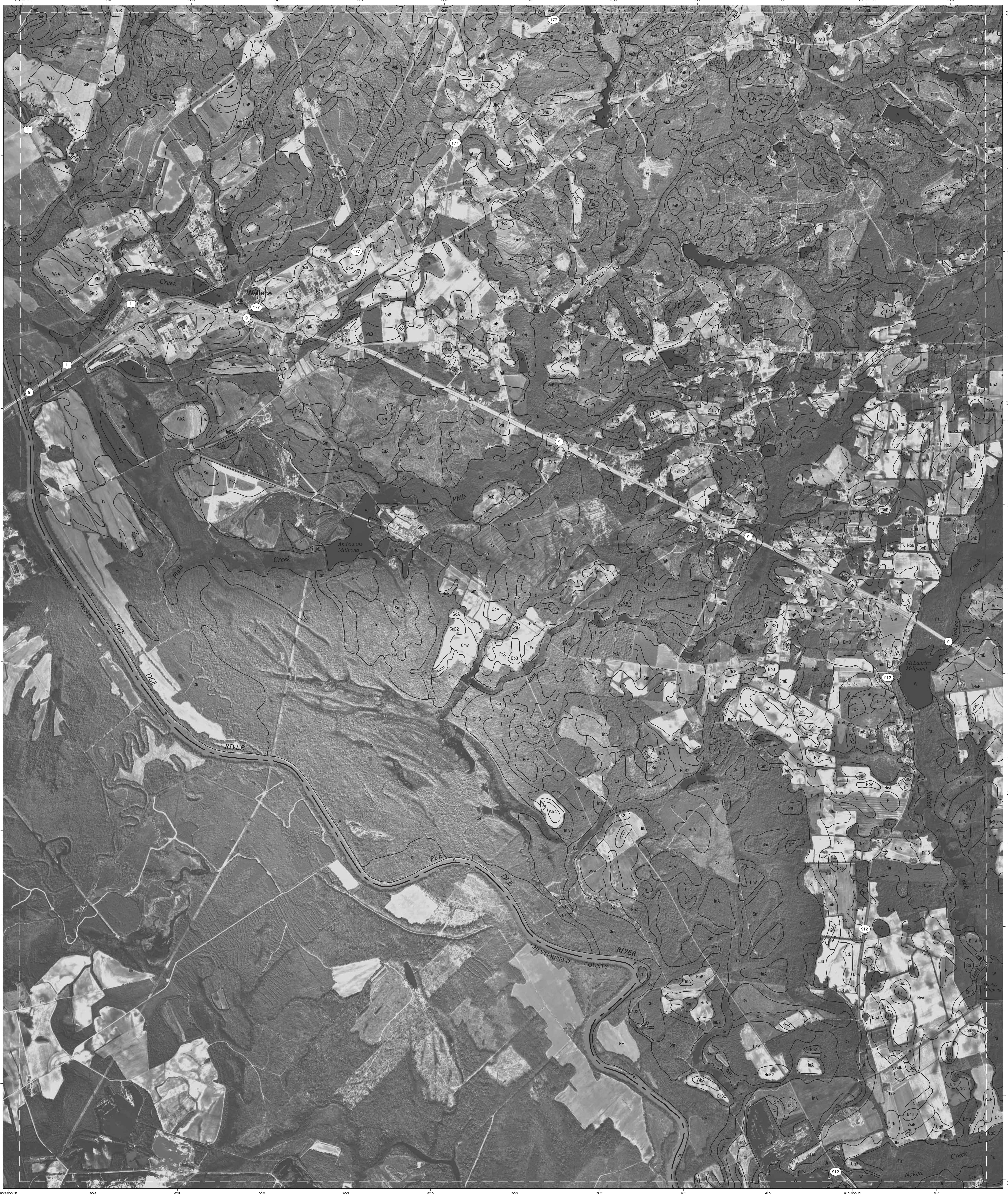
MARLBORO COUNTY, SOUTH CAROLINA
WALLACE QUADRANGLE
SHEET NUMBER 6 OF 18

Joins sheet 1, Morven East
Joins sheet 2, Diggs
Joins sheet 3, Ghio
Joins sheet 5, Cheraw
Joins sheet 7, Bennettsville North



Joins sheet 10, Society Hill
Joins sheet 11, Bennettsville South

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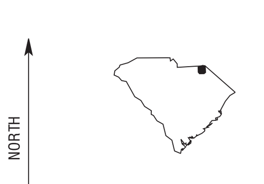

SCALE 1:24000

1 — 0 — 1 MILES

1000 — 0 — 1000 — 2000 — 3000 — 4000 — 5000 — 6000 — 7000 FEET

1 — 0 — 1 KILOMETERS

1	2	3
5		7
	10	11

1 MORVEN EAST
2 DIGGS
3 GHIO
5 CHERAW
7 BENNETTSVILLE NORTH
10 SOCIETY HILL
11 BENNETTSVILLE SOUTH

INDEX TO ADJOINING 7.5 MAPS

WALLACE, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 18

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NATURAL RESOURCES CONSERVATION SERVICE

MARLBORO COUNTY, SOUTH CAROLINA
BENNETTSVILLE NORTH QUADRANGLE
SHEET NUMBER 7 OF 18

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

2	3	4
6		8
10	11	12

2 DIGGS
3 GHIO
4 GIBSON
6 WALLACE
8 MCCOLL
10 SOCIETY HILL
11 BENNETTSVILLE SOUTH
12 CLIO

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BENNETTSVILLE NORTH, SOUTH CAROLINA
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UNITED STATES
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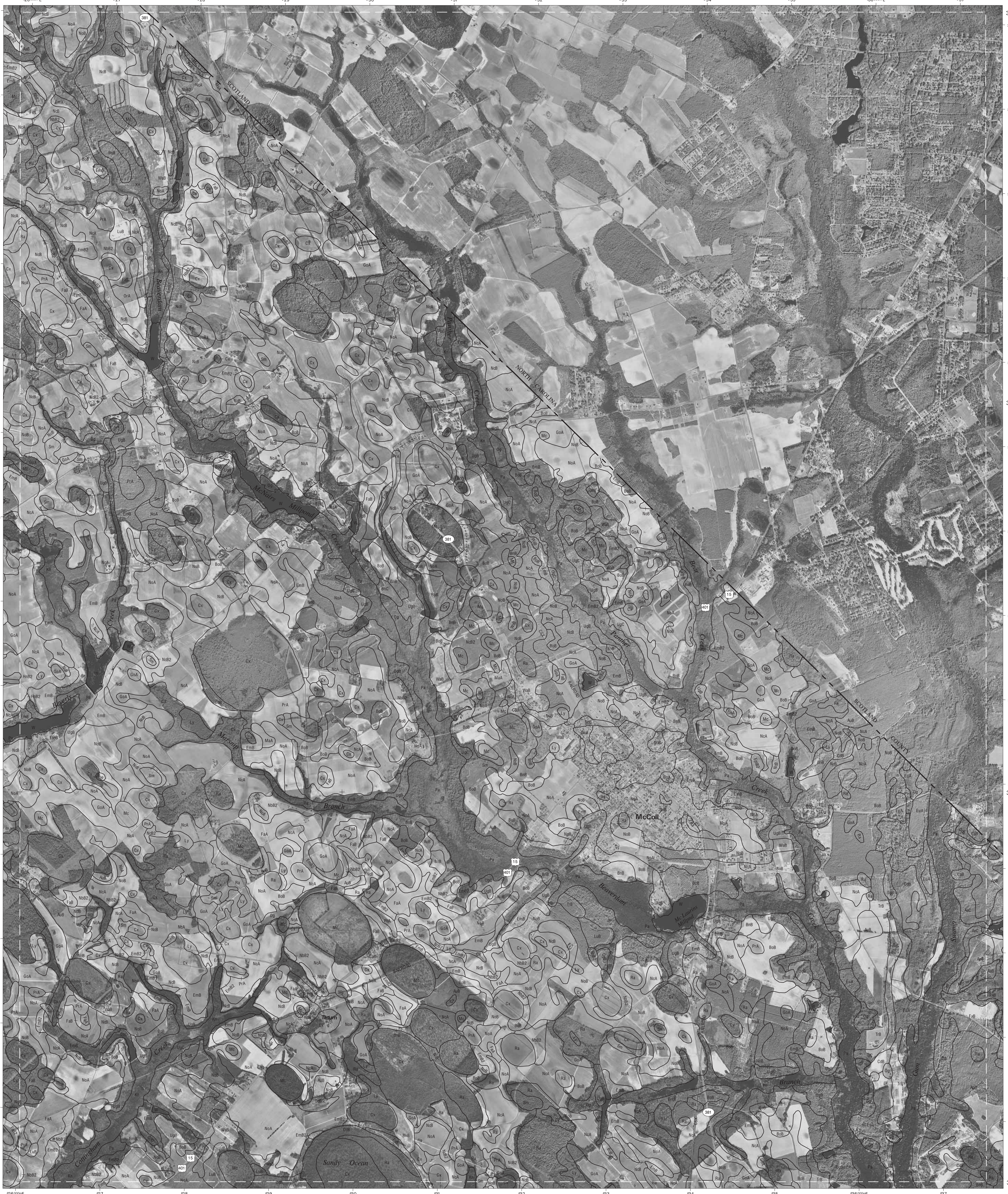
NATURAL RESOURCES CONSERVATION SERVICE

MARLBORO COUNTY, SOUTH CAROLINA
MCCOLL QUADRANGLE
SHEET NUMBER 8 OF 18



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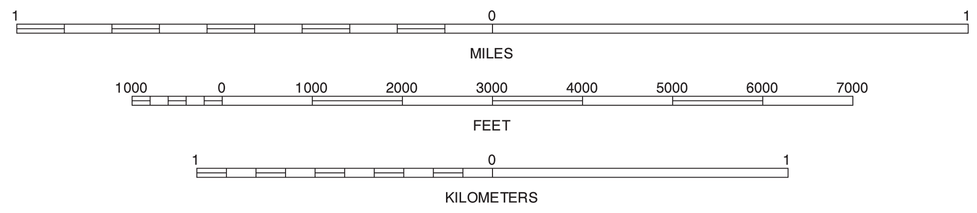

3	4	
7		9
11	12	13

3 GHIO
4 GIBSON
7 BENNETTSVILLE NORTH
9 JOHNS
11 BENNETTSVILLE SOUTH
12 CLIO
13 MINTURN

INDEX TO ADJOINING 7.5 MAPS

MCCOLL, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
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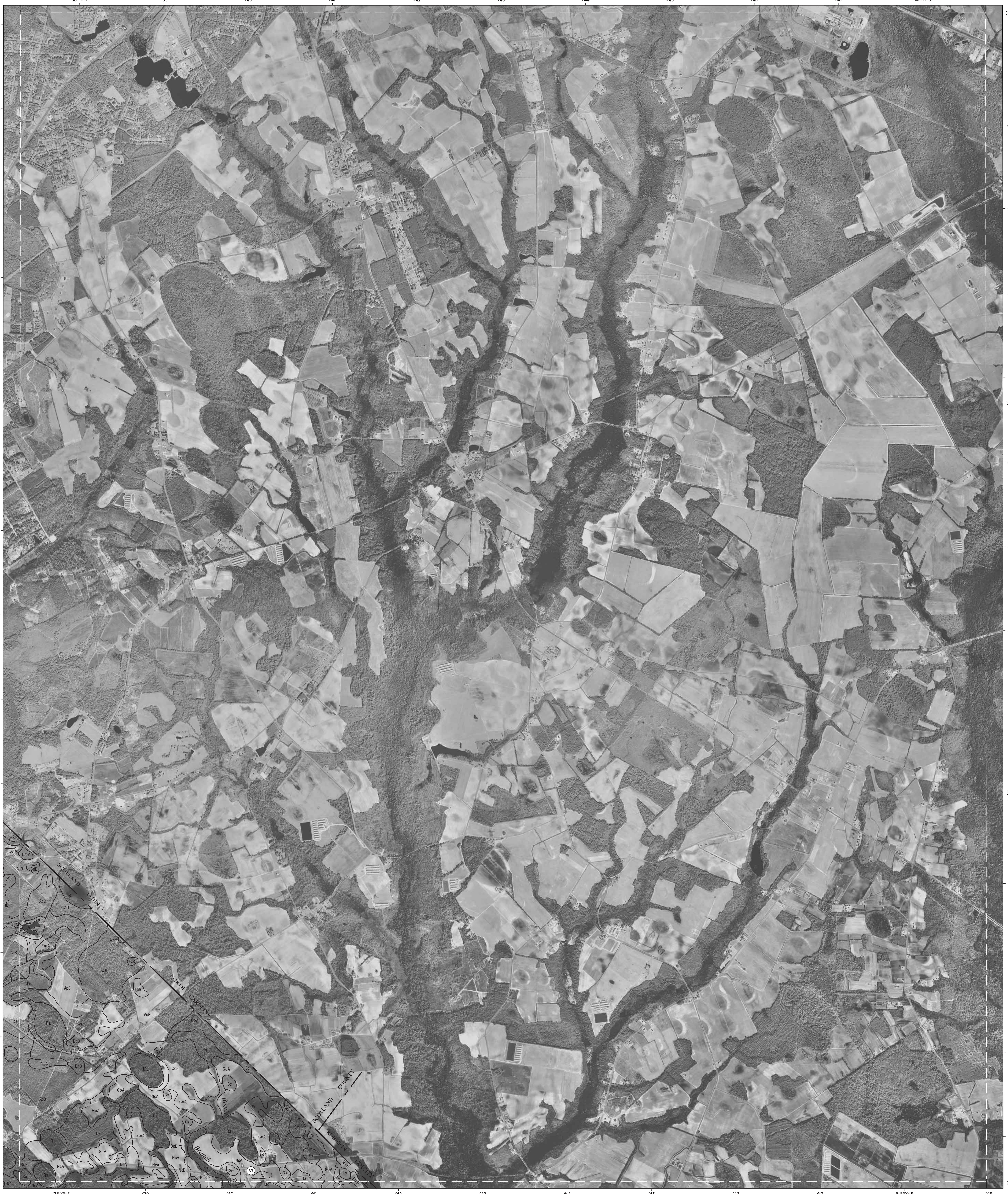
NATURAL RESOURCES CONSERVATION SERVICE

MARLBORO COUNTY, SOUTH CAROLINA
JOHNS QUADRANGLE
SHEET NUMBER 9 OF 18



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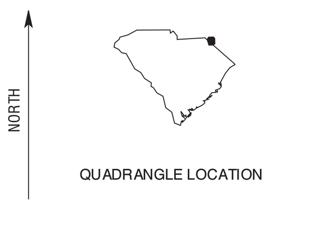
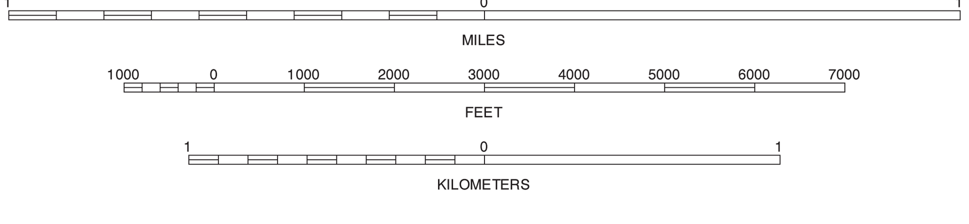
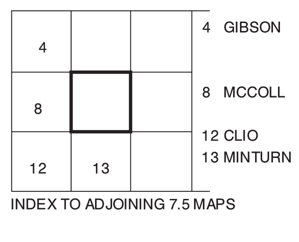


SCALE 1:24000





JOHNS, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 18

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARLBORO COUNTY, SOUTH CAROLINA
SOCIETY HILL QUADRANGLE
SHEET NUMBER 10 OF 18

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

5	6	7
		11
	14	15

5 CHERAW
6 WALLACE
7 BENNETTSVILLE NORTH
11 BENNETTSVILLE SOUTH
14 MONT CLARE
15 DRAKE

INDEX TO ADJOINING 7.5 MAPS

SOCIETY HILL, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 18

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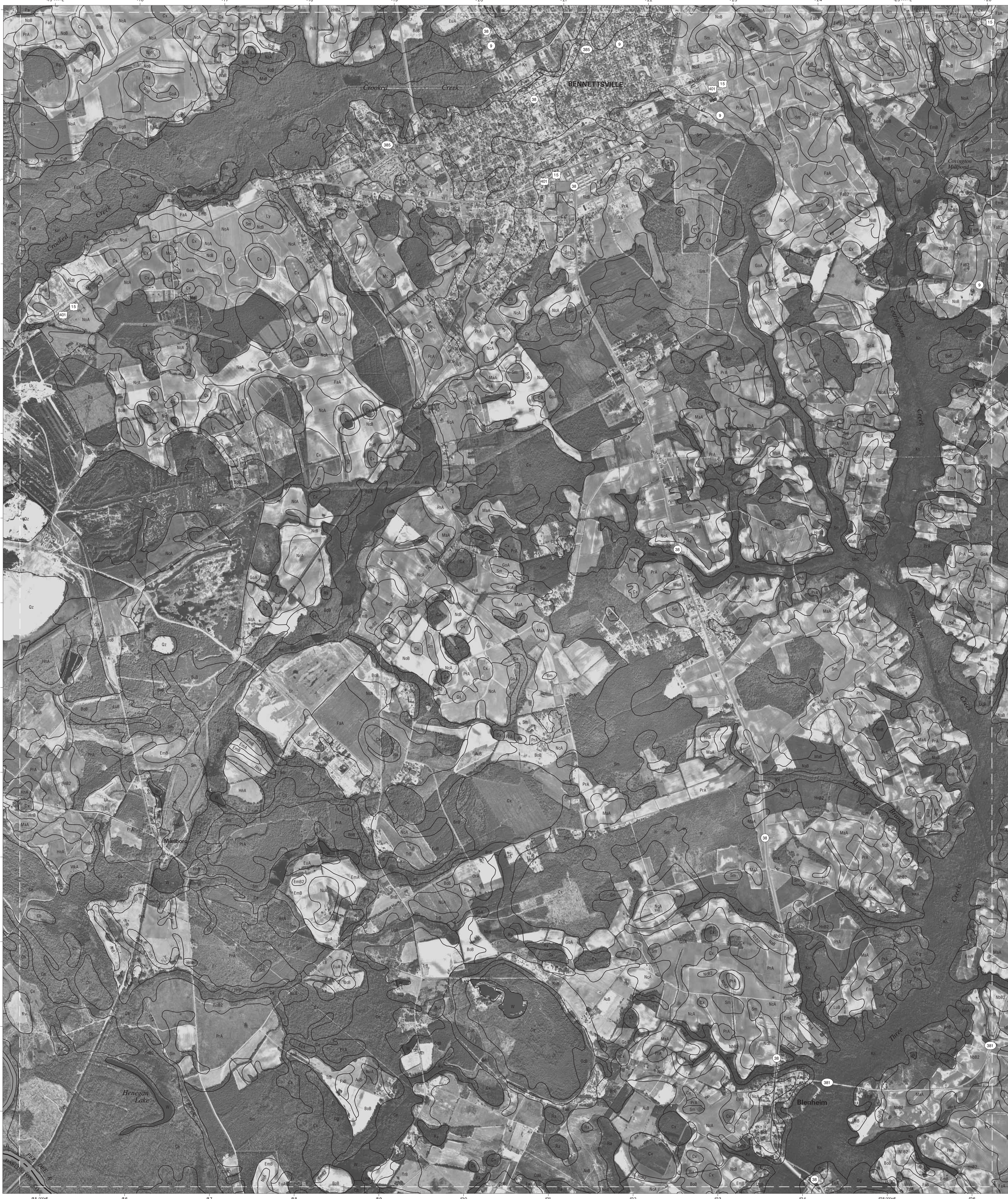
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARLBORO COUNTY, SOUTH CAROLINA
BENNETTSVILLE SOUTH QUADRANGLE
SHEET NUMBER 11 OF 18



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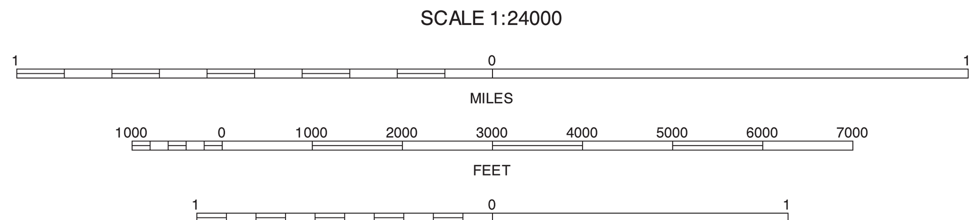
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

SCALE 1:24000



6	7	8
10		12
14	15	16

6 WALLACE
7 BENNETTSVILLE NORTH
8 MCCOLL
10 SOCIETY HILL
12 CLIO
14 MONT CLARE
15 DRAKE
16 BINGHAM

INDEX TO ADJOINING 7.5 MAPS

BENNETTSVILLE SOUTH, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 18

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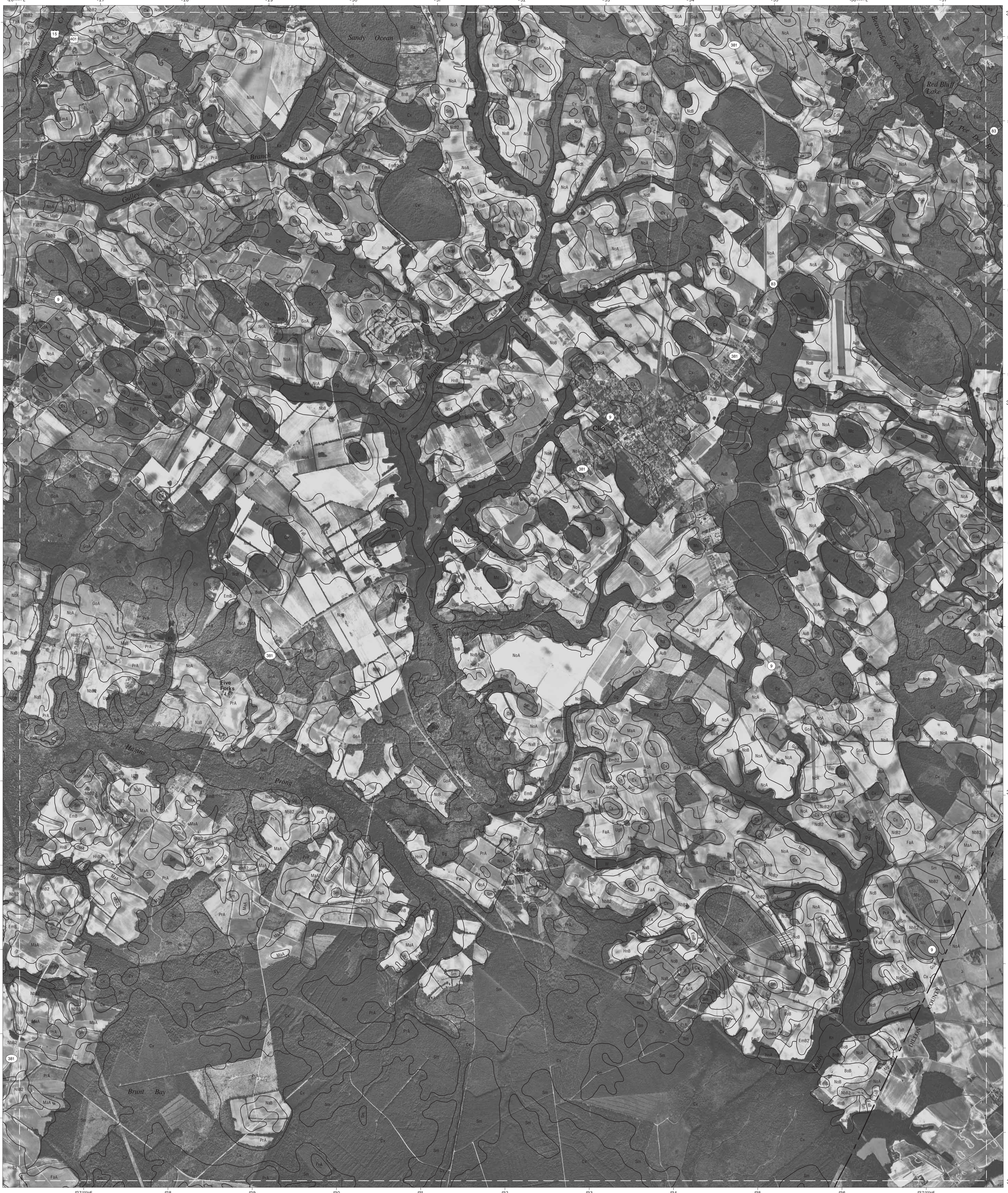
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MARLBORO COUNTY, SOUTH CAROLINA
CLIO QUADRANGLE
SHEET NUMBER 12 OF 18

Joins sheet 7, Bennettsville North

Joins sheet 8, McColl

Joins sheet 9, Johns



Joins sheet 11, Bennettsville South

Joins sheet 13, Minturn

Joins sheet 16, Bingham

Joins sheet 15, Drake

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

7	8	9
11		13
15	16	

7 BENNETTSVILLE NORTH
8 MCCOLL
9 JOHNS
11 BENNETTSVILLE SOUTH
13 MINTURN
15 DRAKE
16 BINGHAM

INDEX TO ADJOINING 7.5 MAPS

CLIO, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 18

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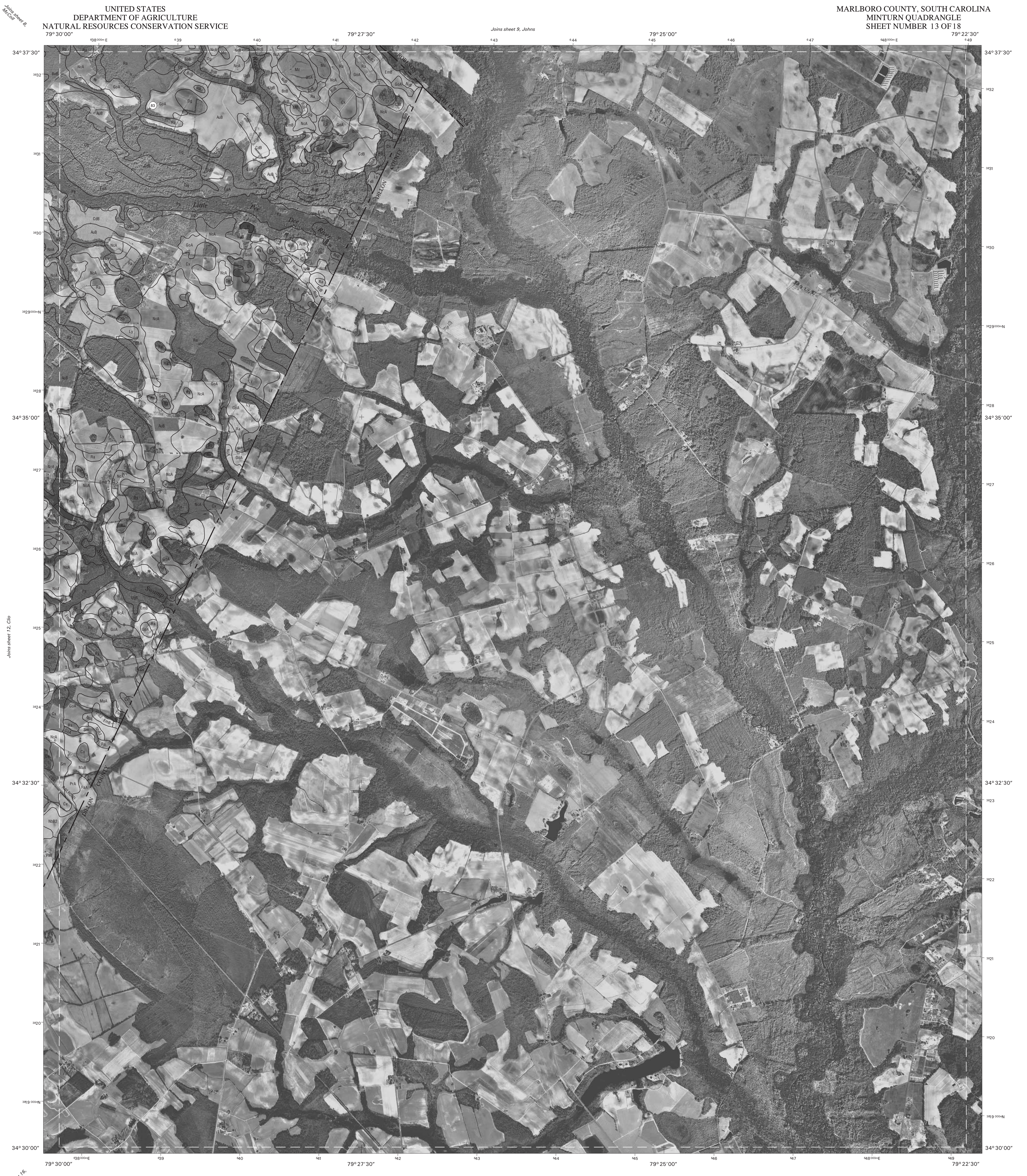
MARLBORO COUNTY, SOUTH CAROLINA
MINTURN QUADRANGLE
SHEET NUMBER 13 OF 18



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

8	9	
12		
16		

8 MCCOLL
9 JOHNS
12 CLIO
16 BINGHAM

INDEX TO ADJOINING 7.5 MAPS

MINTURN, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 18

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UNITED STATES
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MARLBORO COUNTY, SOUTH CAROLINA
MONT CLARE QUADRANGLE
SHEET NUMBER 14 OF 18

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QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

	10	11
		15
		17

10 SOCIETY HILL
11 BENNETTSVILLE SOUTH
15 DRAKE
17 WITHERSPOON ISLAND

INDEX TO ADJOINING 7.5 MAPS

MONT CLARE, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 18

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MARLBORO COUNTY, SOUTH CAROLINA
DRAKE QUADRANGLE
SHEET NUMBER 15 OF 18

Joins sheet 10, Society Hill

Joins sheet 11, Bennettsville South

Joins sheet 12, Clio

Joins sheet 14, Mont Clare

Joins sheet 16, Bingham

Joins sheet 17, Witherspoon Island

Joins sheet 18, Oak Grove

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

10	11	12
14		16
	17	18

10 SOCIETY HILL
11 BENNETTSVILLE SOUTH
12 CLIO
14 MONT CLARE
16 BINGHAM
17 WITHERSPOON ISLAND
18 OAK GROVE

INDEX TO ADJOINING 7.5 MAPS

DRAKE, SOUTH CAROLINA

7.5 MINUTE SERIES
SHEET NUMBER 15 OF 18

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DEPARTMENT OF AGRICULTURE
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MARLBORO COUNTY, SOUTH CAROLINA
BINGHAM QUADRANGLE
SHEET NUMBER 16 OF 18

Joins sheet 11, Bennettsville South

Joins sheet 12, Clio

Joins sheet 13, Minturn

Joins sheet 15, Drake

Joins sheet 17, Witherspoon Island

Joins sheet 18, Oak Grove

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

11	12	13
15		
17	18	

11 BENNETTSVILLE SOUTH
12 CLIO
13 MINTURN
15 DRAKE

17 WITHERSPOON ISLAND
18 OAK GROVE

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BINGHAM, SOUTH CAROLINA

7.5 MINUTE SERIES
SHEET NUMBER 16 OF 18

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UNITED STATES
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MARLBORO COUNTY, SOUTH CAROLINA
WITHERSPOON ISLAND QUADRANGLE
SHEET NUMBER 17 OF 18

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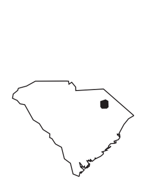

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

14	15	16
		18

14 MONT CLARE
15 DRAKE
16 BINGHAM
18 OAK GROVE

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WITHERSPOON ISLAND, SOUTH CAROLINA
7.5 MINUTE SERIES
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MARLBORO COUNTY, SOUTH CAROLINA
OAK GROVE QUADRANGLE
SHEET NUMBER 18 OF 18

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

15 DRAKE
16 BINGHAM
17 WITHERSPOON ISLAND

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OAK GROVE, SOUTH CAROLINA
7.5 MINUTE SERIES
SHEET NUMBER 18 OF 18

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